THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

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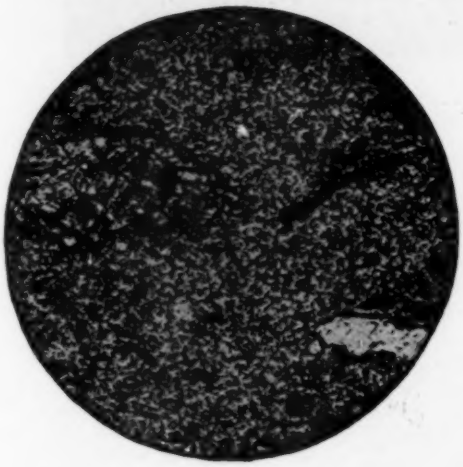

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The same procedure was followed subsequently with each subject, substituting aspirin tablets for Alka-Seltzer tablets. Samples of gastric content were analyzed for pH (Leeds and Northrup, Type K potentiometer with a Hellige glass electrode), free hydrochloric acid and total acidity by titration, and total chlorine by the method of Van Slyke.

Results. Changes in free hydrochloric acid and in chlorine concentrations of the gastric contents were plotted in the form of graphs. During the first sixty minutes after consumption of alcohol a marked increase was noted in gastric acidity. Following the administration of Alka-Seltzer, there was noted a prompt decrease in the free hydrochloric acid of the gastric contents which remained between 2.5 and 24 cc. of 0.1 N acid during the subsequent hour or until the stomachs were emptied completely.

Moreover, the differences noted between the total chlorine and free hydrochloric acid curves served to indicate that the effect of Alka-Seltzer in relieving gastric hyperacidity resulting from alcohol, is brought about by neutralization of the hydrochloric acid of the gastric contents and not by suppression of secretion of this acid.

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BASIC OPERATIONS IN COMMERCIAL CANNING PROCEDURES

V. HEAT PROCESSING THE SEALED CONTAINER

● Previously, we have described how raw food material is sealed in the tin container after proper preparatory treatment. After sealing, the next important step in commercial canning is the heat process, or "process" as it is called in the industry.

Essentially, the processing operation involves exposure of the sealed container to hot or boiling water, or to steam under pressure, for the correct period of time. The purpose of the process is to destroy pathogenic or spoilage organisms which may be present on raw food material; the seal on the can then prevents re-infection of the foods by such organisms. Thus, the sealing and processing operations combine to insure a sound, wholesome canned product.

It is not possible here to review all factors which must be considered in the establishment of an adequate heat process for any specific product. Such factors have been briefly discussed in recent publications (1, 2). It must suffice to state that, in general, commercial processing operations are divided into two general types, depending upon the acidity of the food being canned.

The "acid" foods—including the common fruits and certain vegetables or vegetable products whose pH values fall below 4.5—are quite easily heat processed. With such foods it is only necessary to heat the sealed container long enough to permit the attainment of a definite temperature in the center of the can (usually 200°F. or slightly less). In fact, some acid products may be processed by filling sufficiently hot, sealing and inverting the cans, and cooling without further process.

The "non-acid" foods—such as meat, sea foods, milk and most of the common vegetables—require temperatures above that of boiling water for adequate heat processing. Such foods are processed under steam pressure in a closed "retort", usually at a temperature of 240°F. Years of research have made possible the issuance for the guidance of modern canners of a bulletin listing recommended process schedules for the non-acid products (3).

Regardless of the temperature of processing, equipment is available which permits use of the batch or "still" process, and the "continuous" or "agitating" types of process for sealed cans. Improvements in processing machinery and accessory instruments during the past two decades permit precise, scientific control of commercial processing operations.

Above all, however, the modern canner has a clear understanding of the underlying purpose of the process and a deep appreciation of the necessity for strict supervision of the processing operation. Commercially canned foods, consequently, must be ranked today among the most wholesome foods coming to the American table.

AMERICAN CAN COMPANY
230 Park Avenue, New York, N. Y.

(1) 1938 Food Research 3, 13. (2) 1937. J. Amer. Med. Assn. 109, 1046. (3) 1937. Natl. Canners Assn. Bull. 26L, 3rd ed.

This is the thirty-eighth in a series of monthly articles, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research. We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.

Osteopathic Magazine for August

PREDISPOSING FACTORS IN INFANTILE PARALYSIS. By Perrin T. Wilson, D.O.

A warning against the occurrence of a physiological accident consisting of the over-exertion of certain muscles, to over-heating of the body accompanied by perspiration, and followed by sudden chilling, which the author has observed to have preceded a number of infantile paralysis cases.

IF THE SHOE FITS. By T. L. Northup, D.O.

A discussion of the essentials of a properly fitting shoe and the harmful effects of too high heels.

POLLEN DAYS ARE HERE AGAIN. By Elizabeth Fraser.

An article for hay fever sufferers explaining the body's nervous reaction to the exciting pollen, and giving a few common-sense rules for being as comfortable as possible during the hay fever season.

OSTEOPATHY'S EARLY STRUGGLES IN IOWA.

Another of the scries of dramatic stories dealing with osteopathy's fight for recognition in the early days.

A TRIBUTE. By James L. Holloway, D.O.

In honor of the anniversary of the birth of the Old Doctor on August 6, a portion of Dr. Holloway's address "Dr. Still's Place in History," given before the A.O.A. National Convention in 1916, is reprinted in this issue.

POISE WINS. By Harold I. Magoun, D.O.

Physical and mental poise are pointed out by an eye-witness as the two most important factors enabling Ralph Guldahl to emerge victorious in the 1938 National Open Golf Championship in Denver.

REDUCING THE PUBLIC. By Russell C. Erb, M.S.

A discussion of the necessity for recognizing the cause of obesity before instituting measures against it, and a warning against harmful and useless proprietaries.

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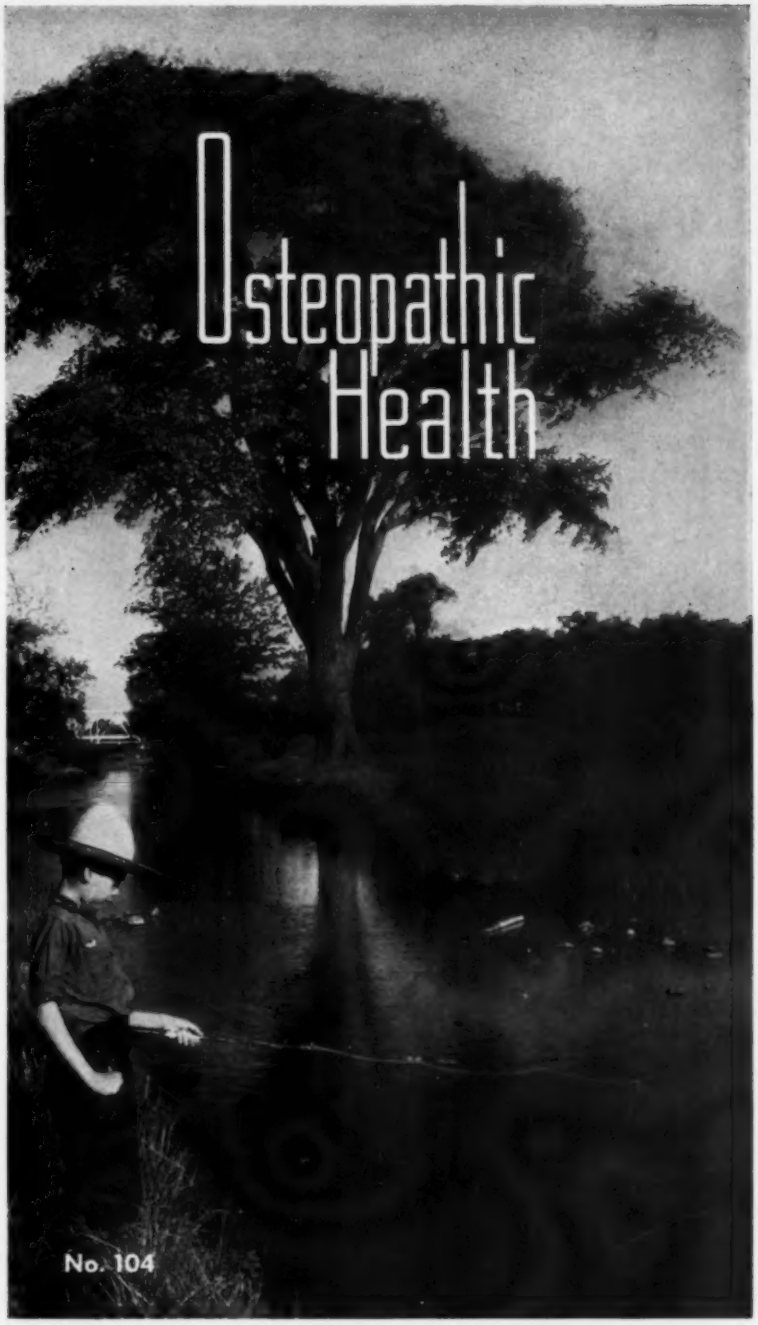

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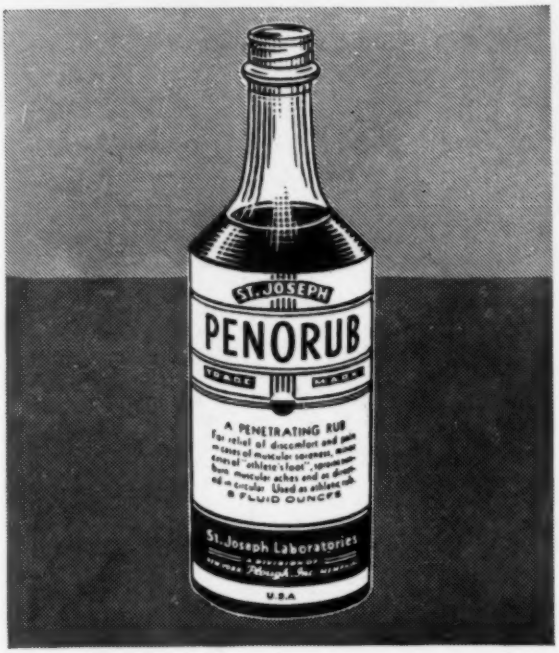
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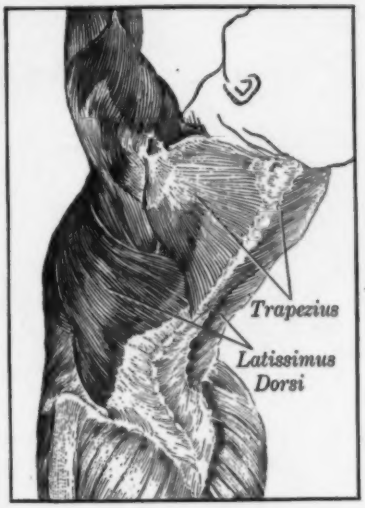

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Head Injuries*

CARLE PHINNEY

Late President of the College of Osteopathic Physicians and Surgeons, Los Angeles

Every case of head injury is a potential surgical case and almost invariably a neurological one.

No single individual is qualified to cope with the problems of complicated head injuries unless he possesses an unusual ability as a diagnostician and at the same time has had a varied experience in the interpretation and evaluation of neurological signs together with a sound fundamental training in surgery and an extensive clinical experience.

In the consideration of our heading, one most naturally thinks of the incidence of skull fracture. However, skull fracture, no matter what the severity or nature of the fracture may be, is of relatively minor importance; the thing of the moment being the extent of injury to the skull contents—the matters to be considered being the preservation of the life of the injured and his return to as nearly a normal condition of thinking and functioning as is possible. This statement must not be misunderstood, for it is at the same time true that in many cases the nature and extent of the fracture *must* be determined early on account of prominent complications.

In head injuries we must consider damage to the brain, its meninges, the cranial venous sinuses, the cerebral arteries, and the cranial nerves.

Minimal external injuries are often associated with extensive trauma to the skull contents, and on the other hand very extensive skull fractures sometimes are associated with but little damage to the brain. Fatalities in head injuries are the result of posttraumatic hemorrhage, edema of the brain, or secondary infection.

About three years ago the Bellevue Hospital of New York reported 1,000 cases of head injury as to cause—at that time 5 per cent of all fractures were skull fractures and about 25 per cent of all head injuries were produced by automobile accidents. Undoubtedly the increasing speed of auto transportation and the rising incidence of traffic accidents have raised the percentage of these types of traumatic cases. Recent figures show that 30 per cent of skull fractures were sustained by persons riding in automobiles and of these, one-half suffered basal fractures.

Skull fractures are designated by all the terms usually applied to fractures of other bones, plus a few distinctive terms to indicate regional damage: simple, multiple, linear, stellate, depressed, indented, comminuted, compound, gunshot, tabular, coronal, basilar, eggshell, diastatic and contracoup.

Scudder[1] has said:

> Every skull that either directly or indirectly is injured, and whether symptoms of intracranial pressure are present or not, should be regarded as having been fractured until it has been proved by x-ray examination that a fracture is not present.

Fractures are not primarily fatal and time is often lost, the delay being fatal when the possibility and probability of damage to the skull contents are disregarded in order to take x-ray films. It is far more important to know the extent of damage done to the brain than to know the extent of a fracture.

All skull fractures present the possibilities of infection, especially those involving air sinuses, nasal or pharyngeal cavities, yet frontal fractures are often extensive and produce no grave symptoms. Witness the Los Angeles County Osteopathic Hospital case in which Dr. H. B. K. Willis removed the major portion of the frontal vault and considerable portions of both frontal lobes of the brain without disturbance of the usual cerebral functions.

Fractures occur in the vault of the skull much more frequently than at the base, where the contiguous location of the thalamic, subthalamic and other vital centers makes the presence of a basal fracture serious; where the foramina for the exits of the special sense and other cranial nerves and those of the great vessels make them liable to injury, and where the nearby air sinuses and spaces render secondary infection possible. Scudder[1] is responsible for the conclusion that 37 per cent of basilar fractures are fatal in 6 hours, 56 per cent in 12 hours.

Moorhead[2] has called to our attention the statement that 80 per cent of skull fractures occur in the "two-inch zone," that is within a two-inch band across the vertex from ear to ear. All fractures in this zone are associated with the less serious and less complicated cases excepting especially those showing trauma to the middle meningeal vessels.

All severely traumatized persons, especially those unconscious and with evidence of head injury, should be placed flat in bed or on a Bradford frame

*Delivered before the Osteopathic Surgical Society of Los Angeles on December 6, 1937.

to prevent unnecessary moving; sideboards should be available; the foot of the bed should be raised 4 to 6 inches; shock treatment must be administered with as little movement of the patient as possible; temperature, pulse and respiration observations should be made every 15 to 30 minutes and the blood pressure recorded every 30 minutes until it becomes stabilized; pulse pressure should be recorded with pulse rate; the reflexes and general body reactions must be carefully observed frequently. If general restlessness is marked, soft restraining bands may be applied to wrists and ankles and sedatives administered, avoiding the giving of morphine or any drug with mydriatic action which may mask pupillary reactions. The taking of x-ray films is contraindicated until after the emergency period has passed.

It is well to determine if possible:

When the accident occurred.
The nature of the accident.
The age of the patient.
The state of his health.
The general condition of the patient.
Whether or not he is in shock.
The nature and extent of any local damage.
The signs of localization of head damage.

The early symptoms of head injuries are:

Loss of consciousness.
Headache and dizziness.
Nausea and vomiting.
Local signs of cranial injury.
Pupillary changes.
Paralysis and reflex changes.
Blood pressure variations.
Shock with temperature-pulse-respiration variations.

All patients with head injury show evidence of shock to a greater or lesser degree so that frequent observations with constant attendance are necessary.

Emergency treatment of head injuries consist of:

Application of warm, dry clothing.
External heat to the body.
Ice bags to the head.
Administration of: pituitrin ½ cc. per hypo., strychnine gr. 1/30 per hypo. or camphor in oil 1 cc. which has a more slow, sustained action than strychnine.

Most cases of head injury show signs of concussion with unconsciousness and depression. Concussion of the brain causes swelling of cerebral tissues with an attendant tendency to cerebral edema and a consequent increase in intracranial fluid pressure essentially indicated by rising blood pressures and rising pulse rates. In such cases 50 per cent glucose solution in amounts varying from 40 to 100 cc. should be administered intravenously, 40 to 50 cc. if the patient is fat with boggy tissues, 100 cc. if the patient be thin, to which, in that case, may be added 50 to 150 cc. of hypertonic saline solution. The above treatment brings about a reasonable physiological decompression through depletion of cerebral edema and the reduction of intracranial pressure. The hypodermic medication administered is for the prevention of the loss of fluids from the skin, the pituitrin for increasing vasoconstriction by improving the diastolic pressure. Administration of glucose intravenously should be repeated in 4 hours in severe cases plus the 50 to 150 cc. of hypertonic saline. Except in shock or evident dehydration, magnesium sulphate may be administered by mouth, if the patient is conscious, or by the rectum if the patient is unconscious, for the purpose of relieving the circulating fluid volume extracted from the cerebral spaces by the administration of intravenous glucose and saline. We must remember that the blood volume must be maintained at such a level as to keep the diastolic pressure above 60 mm. Hg. On this account the administration of magnesium sulphate must be gauged to meet this demand and when administered should follow the giving of the intravenous glucose solution by one hour.

Further observation of the patient must establish the presence or absence of the evidence of local damage:

(1) Hematoma of the scalp. This often simulates fracture of the skull, especially depressed fracture, with its soft yielding center and the firm, more or less sharply-defined margin. Moorhead[2] advises incision of the hematoma, the surface having been shaved and cleansed and the interior then explored with the gloved finger. Incision eradicates the hematoma and makes certain the diagnosis as to fracture.

(2) Cuts and lacerations of the scalp and its aponeurosis. Reconstruction must be done with drainage for 24 hours, all bleeding points having been secured.

(3) Subconjunctival hemorrhage and ecchymosis of the mastoid region. Both phenomena indicate fractures of the skull, one of the orbital plates, the other, known as Battle's sign of the base. In many cases the extent of the hemorrhage indicates not only the extent of the damage, but also the degree of possibility of vicarious relief of intracranial pressure.

(4) Escape of blood, cerebrospinal fluid or brain matter at the point of injury. Escape of brain from a laceration or fissure indicates a compound, and, possibly comminuted fracture. In such cases, in addition to cleansing and débridement of the wound, all damaged and torn brain matter must be removed. This may be done with a syringe to which is attached a soft rubber catheter. This removal lessens the possibility of necrosis of damaged brain matter. Bone fragments must be removed and carefully matched and compared with the rent in the skull to insure complete débridement, the dura mater reconstructed and the wound closed without drainage except for a small drain in superficial structures. This procedure may often necessitate the use of x-rays to insure complete removal of all débris. If blood or spinal fluid is found in the ear canal, the external canal should be carefully cleansed and packed with a light mercurochrome pack. If blood or spinal fluid shows in the nasal cavity, a lightly packed thin rubber finger cot lightly lubricated is inserted in the nasal cavity. Bleeding from the ear or nose results in a vicarious decompression with an improved prognosis. Caution the patient against snuffing or blowing the nose. Avoid douching or any instrumentation.

Evidence of a badly depressed fracture does or does not demand attention, depending upon the degree of damage done to meninges or brain, or upon the degree of decrease of intracranial space.

One should examine the eyegrounds on account of the fact that the existence of protrusion

of the optic papilla or of a choked disc indicates interference with the lateral sinus or intracranial pressure. Dilated pupil, fixed or failing to react to light, indicates brain damage on the side affected.

The degree of response or absence of response to tests of all reflexes, as do the general body responses and reactions, becomes illuminating in its evidence of cerebral damage.

The diagnosis of head injuries depends upon all the above observations, upon the degree of unconsciousness and upon various neurological signs. In all cases in which head injuries or fracture are suspected, consultation with a neurologist should be secured. By a neurologist is not meant a brain specialist or a psychiatrist, but one especially trained in the interpretation of neurological signs and phenomena and in their evaluation. No neurological or brain operation should be performed until the surgeon has the assistance of a neurologist in locating the site of the lesion.

The *symptoms* of skull fracture with brain injury are local, general, and localizing, as well as is the degree of unconsciousness.

The local symptoms are pain, wounds with depression or fissure in the calvarium with mobility or crepitus, escape of blood, spinal fluid or brain matter, and ecchymosis or emphysema in the soft tissues.

General symptoms are: unconsciousness, vomiting, often projectile, headache, vertigo, general flaccidity of muscles, loss of deep reflexes, and variations in the pulse, blood pressure, respiration and temperature.

Localizing symptoms are: deviations in the position of the eyes, inequality in the pupillary reactions, local motor and sensory paralysis, disparity in the deep reflexes or in the temperature of the two sides of the body, disturbances of the higher psychic functions, and aphasia. Unconsciousness is common in all the stunned subjects. In mild unconsciousness recovery begins to take place at once, but upon regaining consciousness, the subject is giddy, weak, has headache, is dull and confused. The accident and preceding acts are forgotten. In severe cases, the unconsciousness may last for minutes or for hours. The patient is in shock; he is pale; pulse is slow, irregular, and compressible; respirations are superficial and irregular or the breathing is stertorous. The conjunctivae are insensitive and painful skin impressions produce no reactions. Pupils may be contracted or dilated, but respond to light. There may be convulsive twitchings. Vomiting is common. The patient lies on his side; his body is flexed and irritable; his face is flushed; his eyes are bright and suffused; his pulse is rapid and of high tension. If this condition is prolonged, contusion and brain laceration may be suspected. Unconsciousness may be the result of: severe shock, coma from opium, uremia, apoplexy, or alcoholism—all of which have their distinctive characteristics; yet shock cases, and apoplectic and alcoholic subjects may have suffered severe head injuries.

Unconsciousness if immediate indicates cerebral concussion.

Unconsciousness if prolonged indicates cerebral hemorrhage from trauma.

Unconsciousness with intervals of consciousness indicates extradural hemorrhage.

Unconsciousness gradually deepening indicates cerebral laceration with hemorrhage.

In diagnosis, we may apply a number of tests, remembering the value of neurological findings and the dependence to be placed on the opinion of a trained neurologist.

Aphasia is difficult of differentiation from unconsciousness or stupor. The patient may not understand, or, understanding, may not be able to respond. Aphasia may not be complete. Strong supraorbital nerve pressure usually causes drawing up of the corner of the mouth on the same side and indicates lesion, pressure, or damage in the lower Rolandic area; if accompanied by general restlessness or audible protest, it indicates general cerebral pressure or damage. If the corner of the mouth is drawn up and protective efforts against this pressure are made, aphasia with some focal lesion exists. This is definitely diagnostic.

If the patient struggles and exhibits purposeful efforts to protect himself against firm heavy pressure over the upper thighs, *stupor* is *light;* if only the respiratory rate is increased, the *stupor* and therefore the *cerebral pressure* is great.

If measurement of the pupils shows one to be dilated and fixed, brain damage exists on the side of the lesion.

If the eyes are deviated to one side, damage has been sustained on the side of deviation.

Proptosis of one eye indicates damage on that side of the head with pressure on the cavernous sinus. If both arms are raised and dropped suddenly the arm on the damaged side drops like a plummet.

The loss of abdominal reflexes indicates the side on which a damaged area exists.

Oppenheim's reflex—extension of the toes on scratching the inner side of the leg or on completely flexing the leg on the thigh and the thigh on the abdomen — if positive, indicates the side of the lesion.

Babinski's sign, if strong but fleeting, is positive on the affected side on stroking the inner side of the foot; if associated with ankle clonus, it indicates motor pathway involvement.

Hoffman's sign — the approximation of the thumb and index finger on sharply snapping the nail of the middle finger—if positive, indicates the side on which brain damage exists.

Spinal puncture, disclosing, as it may in skull injuries, the presence of blood in the spinal fluid and the existence of a supernormal degree of fluid pressure, is highly diagnostic as well as offering therapeutic aid of real value. Such a procedure is never imperative unless the respiratory rate indicates excessive pressure.

Spinal puncture must be carefully done under strict aseptic conditions. If possible, manometric readings should be made; if impossible, the escape of fluid, which should normally be drop by drop, must be carefully observed. Fluid should be clear and the pressure not above 14 mm. Hg; if above 14 mm., and even if clear, this increased pressure

indicates the possibility of epidural hemorrhage. Epidural hemorrhage is indicated, if after recovery from shock and unconsciousness, the patient relapses into unconsciousness. Bloody fluid indicates laceration of the brain and its vessels. Blood retards or obstructs the outflow of cerebrospinal fluid. Blood in the fluid indicates laceration of the brain with consequent edema and swelling and calls for repeated spinal puncture for drainage at such intervals as symptoms indicate. The finding of 10 per cent blood in spinal fluid makes repeated puncture inadvisable on account of the possibility of increased bleeding or of clotting. In *cerebral trauma,* with concussion and edema, the spinal fluid is clear under increased pressure. Respiratory rate may be 12 to 20 or increased to 32 a minute. The pulse is slow except during shock; the temperature is subnormal or may rise to 100 to 102F. The patient is restless with intervening quiet periods.

In subarachnoid bleeding the spinal fluid is bloody, the respirations are deep and stertorous with accompanying stupor. The pulse is usually thready and rapid. The temperature rises to from 103 to 107F. If the temperature rises above 105F., traumatization of the pons or subthalamic area may be suspected.

Blood pressure observations are always of importance; they should be recorded frequently and consistently and their relation to pulse rate and pulse pressure and temperature be considered of great importance.

The prognosis in all cases of head injury should be guarded. Many cases apparently with a mild degree of injury succumb suddenly, while others of extensive fracture and major damage to the skull contents escape with minor effects. Prognosis depends upon the presence and location of the fracture, upon the presence and degree of hemorrhage, and upon the appearance and severity of signs of cerebral damage. The possibility of infection must be considered always.

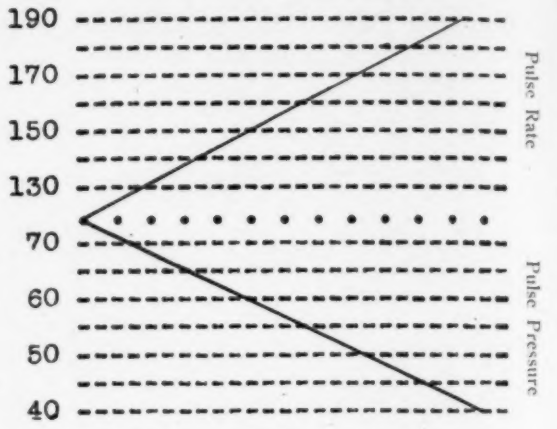
Late unconsciousness is always significant of extensive hemorrhage. Excessive temperatures, for instance above 105F., are always serious and indicative of basilar damage or of medullary edema. Basilar fractures are always serious because of proximity to vital centers and because the base of the brain is relatively firmly attached to the skull as are the important structures making their exits from the basilar foraminae. Forty per cent of brain lacerations are fatal; 90 per cent of combined subdural and subarachnoid hemorrhages are fatal. In general, prognosis for life is good if patient survives for 48 hours.

Following examination and emergency treatment, ice bags should be kept on the head. Complete blood count should be made and the patient's blood typed, anticipating the necessity of a blood transfusion. Complete urinalysis should be made and fluid intake and output measured. If the spinal fluid is clear and spinal drainage unnecessary, the fluid intake should be limited to 20 ounces in 24 hours. If the fluid is bloody and repeated spinal drainage is necessary, the fluid intake should measure 30 ounces in 24 hours.

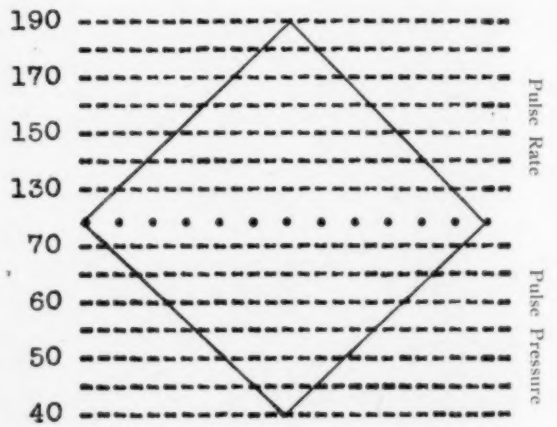
The post-shock management of a head injury demands the maintenance of the diastolic blood pressure minimum by the frequent giving of small

A TABLE FOR COMPARISON

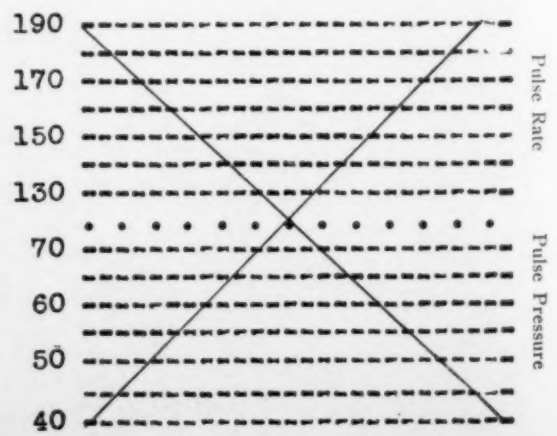
No. 1.—Early Fracture



No. 2.—Bad prognosis, eyegrounds, reflexes, and pupillary changes abnormal



No. 3—Prognosis fatal



quantities of fluid by mouth or, if the patient is unconscious, by administering four ounces of fluid per rectum every 6 hours or by hypodermoclysis or intravenous administration.

If restlessness is marked, sedation may be given in the form of sodium luminal 2 grains by hypodermic, or chloral hydrate 15 grains, or sodium bromide 30 grains every 4 hours by mouth if the patient is conscious; if unconscious the drugs may be given per rectum but the dosage should be doubled.

Pituitrin 15 grains every 4 hours may be continued, if necessary to maintain vasomotor tone.

Digalen may be administered if the pulse continues above 120. If cardiac stimulation is considered necessary, camphor in oil is very dependable; it is given easily and acts slowly over an extended period.

Urotropin 10 grains, 3 times a day, may be given as a urinary tract prophylactic.

Should the pulse rate continue over 120, the emergency treatment of 50 cc. of 50 per cent glucose may be given intravenously, every 4 hours (favorable consideration may be given to sucrose). If the pulse pressure and the pulse rate approach, a magnesium sulphate enema may be given.

Magnesium sulphate .....3 ounces
Glycerine .....1 ounce
Water .....2 ounces, which need not be subtracted from the fluid limit.

Reports as recent as August, 1937, state that the intravenous administration of 50 per cent hypertonic solution of sucrose in amounts of 200 to 300 cc. given at a rate of 5 cc. a minute is of moment in the treatment of excessive intracranial pressure. Sucrose often produces a greater reduction of intracranial pressure than is secured by the use of glucose, three times the amount of reduction secured by the administration of the single sugar having been observed. The use of sucrose is particularly useful in cases in which spinal drainage is unsuccessful or impossible. Thirst arising from the treatment must be disregarded and fluids withheld in order not to nullify the effect of sucrose administration.

The above series of medicaments deserves consideration with the emergencies which arise and which must be met promptly to preserve life. During this period, x-ray studies may be pursued.

Practically all cases showing signs of severe shock are suffering from cerebral concussion with resulting edema and swelling. One authority says that concussion of the brain represents a physiological rather than an anatomical condition. The result of concussion, edema, and swelling with marked intracranial pressure or the results of contusions and lacerations of the brain with hemorrhage and interference with spinal fluid drainage and a consequent rise of intracranial pressure, respond to physiological decompression represented by dehydration and spinal drainage. Surgical decompression has been limited to but a possible 5 per cent of skull fractures not relieved by physiological methods. Surgical intervention often adds insult to the already injured brain and the patient fails to recover. Surgical decompression should be attempted only when other means fail or in the evident presence of an extradural hemorrhage definitely localized by neurological examination. When attempted in the presence of marked intracranial pressure, hemispherical decompression should be done because small decompression openings may permit fatal herniation of the brain. Decompression in otherwise hopeless cases not responding to conservative treatment saves one case in twelve.

Surgical treatment becomes imperative in the presence of evidence of extradural hemorrhage. Localization of the site of arterial damage by neurological examination is followed by trephinement and subsequent removal of clot and ligation of the bleeding vessel.

Because of rapid necrosis of brain matter when under pressure, surgical treatment is indicated to remove or lift depressed fragments revealed by the x-ray.

Excessive intracranial pressure, evidenced by marked depression, rapid weak pulse, high temperature, lowered pulse pressure with low pulse rate, abnormal eyegrounds, disturbed reflexes, unequal pupils and high blood pressure, calls for at least a subtemporal decompression.

Surgery for these conditions may be done with local infiltration of anesthetic, the scalp having been carefully shaved. In performing a subtemporal decompression, a crescentic incision is made along the line of the temporal ridge or parallel to it and slightly lower. Following the reflection of the scalp, the temporal fascia is incised and the temporal fascia and muscle is reflected from the temporal bone. With a drill or trephine, an opening is made in the temporal bone about its middle. After careful separation of the endocranium, with a DeVilbiss forcep or rongeur, a section of the tabular portion of the temporal one to one and one-half inches in diameter is removed. Bleeding points in the scalp must be controlled by hemostats or by suture ligatures. Bleeding from the bone must be controlled by the use of bone wax or of muscle grafts. At this point the dura mater may be slightly incised. If pressure is not too great, the dura may be freely incised. With excessive pressures, free incision may be done at a subsequent operation. Following the securing of bleeding points, the temporal fascia and muscle are replaced with interrupted chromic sutures. The scalp incision is carefully closed with interrupted dermal sutures. Should the decompression be done in two stages, the dura may later be freely incised even at times calling for reflection of a strip of dura under the temporal muscle for subtemporal drainage. Good judgment is necessary in the determination of the size of the decompression area as well as the degree of opening of the dura.

Following recovery from decompression, the fault in the temporal bone may be repaired, if desired, by grafting a section of bone from the ilium.

Surgical treatment other than decompression may be considered in such involved conditions as: compound comminuted fractures, depressed fractures, gunshot fractures, fractures involving middle meningeal vessels with epidural hemorrhage; and focal abscesses. In many of the above named con-

ditions, unless the cerebral spaces are badly limited, the necessity for operative procedures does not arise within the ten day period. It must be noted however, that cortical changes are rapid when direct pressures from fragments or a depressed section of the skull are present as may be shown by encephalography.

In the first 10 day period following the 24 hour emergency treatment for shock and post-shock blood pressure maintenance, physiological decompression must be continued, that is, dehydration by means of the administration of 50 per cent glucose (or of sucrose) intravenously, necessity for which is indicated by the pulse rate; or it must be controlled by spinal drainage if bloody spinal fluid is present under pressure. Fluids should be limited to 20 ounces a day if spinal fluid is clear and spinal drainage is unnecessary—to 30 ounces a day if spinal drainage is continued. A dry diet must be prescribed.

If spinal drainage is performed, samples of the fluid should be set aside for comparison of its sedimentation rate and a daily cell count made.

Neurological examination, as previously outlined, should be repeated frequently to determine the possible localization of the lesion or for any evidences of recovery.

When spinal puncture for drainage is discontinued, the fluid intake should be reduced to 20 ounces for 2 or 3 days and gradually increased to 32 ounces. This fluid restriction to 32 ounces should be imposed for a period of 3 months, adding not more than 4 to 6 ounces for excessive hot weather or excessive thirst. Fluid management as a rule will control dizziness and headache during recovery period. Diet should be dry with avoidance of sweets and salts. Diet should include: fluids of all types — 32 ounces; sugar — 3 drams; meats, fresh water fish, eggs, cereals, rice, vegetables, butter, milk, and cheese, fruits; simple desserts such as plain cake, simple puddings; vegetables allowed: potatoes, peas, beans, carrots, beets, parsnips and corn — all as dry as possible.

Meals should be of equal and of moderate portions and eaten at regular intervals.

One meal per day should be uncooked vegetables and fruits. Fluid regime should be:

At breakfast, lunch and dinner 6 ounces.

Between breakfast and lunch 4 ounces.

Between lunch and dinner 5 ounces.

After dinner 5 ounces.

Posttraumatic signs of headache, dullness, mental depression, impairment of memory, lack of ability to concentrate and also of initiative, all respond to the administration of glucose for the relief of increased intracranial pressure. During the period of active treatment, the patient should not see nor mingle with others similarly injured, nor should his case be discussed with him nor within his hearing. He must be protected from all forms of mental or nervous excitement. During convalescence all lines of activity must be supervised; contact must be allowed with but few people; only mild forms of recreation may be permitted; long periods should be spent out of doors; rest periods both morning and afternoon should be enforced, and early retiring insisted upon.

Hygienic measures together with manipulative therapy must be given consideration. Warm sponge baths, following the period of marked irritability, should be administered daily and be followed with gentle massage. Bowel elimination, when not affected by magnesium sulphate administration must be controlled and careful check made of kidney function or pathology.

As soon as possible, in the judgment of the physician in charge, careful soft tissue work should be used to relax the whole spinal musculature, to which may be added, when the condition of the patient warrants, the correction of any lesions produced at the time of the injury.

Head injuries are frequently complicated by spinal or other major fractures which tax the ingenuity, patience, and skill of any physician. They, as well as lacerations and extensive contusions, demand special care, but never to the extent of jeopardizing recovery from cerebral trauma.

The importance of hygienic care and attention to possible pressure sores and the general comfort of the patient make a good nurse imperative for the welfare of the patient.

Patients with the following injuries should be cared for as indicated in the following table shown by McBride.[2]

	CONFINED IN BED	OBSERVATION AND TREATMENT	RETURN TO WORK
Contusion and lacerations	24 hours	1 week	1 week
Concussion	24 hours	1 week	1 week
Unconscious 1 or more hours —no intracranial pressure	7 days	10 days	14 days
Unconscious—skull fracture— intracranial pressure	10 days	30 days	60 days
Unconscious — high intracranial pressure	28 days	90 days	120 days
With or without skull fracture—high intracranial pressure requiring decompression	52 days	120 days	140 days
Head injury showing strong neurotic tendencies	40 days	120 days	180 days

Following severe cases, occupation should be light and undertaken on part time at first with very gradual resumption of full-time activity.

Late results of head injuries include: sensitive scars, osteomyelitis, headaches at times resulting from subdural adhesions, dizziness, vomiting, general nervousness, mental changes, visual disturbances, diminished hearing, tinnitus, insomnia, convulsive states, numbness, staggering gait, hallucinations, changes of character, chronic cerebral abscess, traumatic epilepsy.

Surgical measures offer promise of relief in certain of the above, notably in subdural or arachnoid adhesions and in traumatic epilepsy. No operative interference should be undertaken without localization of lesions by encephalography.

RECAPITULATION

The frequency of head injuries is rapidly increasing on account of the hazard from automobile traffic.

Damage to brain substance is of greater significance than skull fracture.

Extensive brain contusions which often result fatally are found with no external evidence of skull

fracture while extensive skull fracture may exist with no grave aftereffects.

Basal fractures are of more significance than those of the cranial vault.

X-rays are of more importance medicolegally than of immediate diagnostic or therapeutic value and should be deferred beyond the period of emergency care.

Emergency care and preservation of life outweigh consideration of the skull fracture itself.

Neurological examination is of prime importance in the localization of the lesion.

Treatment of head injuries comprises: emergency care and 10 day post-emergency care and careful observation which may be prolonged to one year.

No other type of surgical condition demands the same degree of observation, nursing care, or attention to every detail in emergency and routine treatment and especially during the prolonged convalescence.

In treatment, physiological decompression through intravenous administration of 50 per cent glucose or sucrose followed by depletion of the circulating fluid mass by administration of magnesium sulphate aided by repeated spinal puncture and drainage, offer greatest promise of result.

Surgery should be reserved for depressed fractures or other conditions which dangerously limit cerebral spaces or for cases which fail to respond to conservative measures.

To employ surgery in the presence of extensive brain lacerations is to add insult to injury of cerebral substance.

Maintenance of life and of the integrity of the nervous system through protection from shock, from dehydration, and from excessive intracranial pressure, and by general support and absence of irritating contacts, is imperative.

Adequate care of head injuries challenges the best in surgeon and general practitioner.

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Pathomechanics from the Obstetrical Viewpoint*

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In the practice of obstetrics more consideration has been given to the mechanics of the human body than perhaps in any other field of medicine, but this has been confined almost exclusively to parturition and the mechanics of labor. The measurements of passage and passenger have been given a great deal of thought. But until Dr. Still gave to the world the principles upon which osteopathy is founded, little had been done in the diagnosis and treatment of mechanical disturbances that affected the health of the individual before or during pregnancy. The osteopathic structural lesion, together with some of its many ramifications affecting the blood and nerve supply to any given organ or groups of organs, lays the foundation, often many years in advance, for serious complications during the pregnant state. It is at this point that we should begin our consideration of the subject, "Pathomechanics from the Obstetrical Viewpoint."

This is outstandingly a field in preventive medicine, and we as osteopathic physicians have been making use of it since osteopathy was founded. More often than otherwise, perhaps, we have thought of it more from the standpoint of the immediate welfare of the patient who was sick, than from the standpoint of building and protecting the health of the individual for the future. The osteopathic obstetrician has always had a wholesome respect for nature's law, and his enviable record is based largely upon his adherence to these laws. He has not often been ready to offer improvements upon nature's ways, but always he has been found searching for, and removing obstacles to the natural processes of anatomical and physiological function. He has sought to aid nature, and his processes conform to natural law. Great has been his reward. Sometimes his works have been called miracles, but he has modestly brushed aside any credit except the credit for having learned and followed nature's law.

I believe there is room for most of us to improve in our osteopathic thinking, and in the thoroughness of our osteopathic examination and the application of osteopathic principles. A long-range view of the work we are doing will give us new inspiration and increased pride in our profession that will carry us on to greater accomplishments.

Pathomechanics is not a new subject to osteopathic physicians. Under other titles we have dealt with it since osteopathy was born. The osteopathic structural lesion has been recognized by our profession as the cause of much disease, often in regions far removed from the primary structural anomaly. Faulty posture and its resultant impaired health and deformities has been a fruitful field for osteopathic research and treatment. Sacroiliac subluxations, anatomical and apparent short leg, faulty foot function, sometimes use of high heels, have been the underlying causes of much functional and organic disease in various parts of the body. All of these have encroached upon the rule of the artery. The action of the diaphragm has been impaired and oxygenation of the blood and tissues of the body affected. Body metabolism has been interfered with and nutrition of the cells of the body has been impaired. Much of the illness in children has its origin in these factors. Cardiorenal function and the output of the glands of internal secretion have been impaired. Today it is a functional disorder; tomorrow it may be organic.

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Coming a little more specifically to the pathomechanical phase so far as it immediately affects the obstetrical patient, let us consider that the sacroiliac or lumbosacral, as well as other lumbar lesions whether primary or secondary, may in one patient be a factor in causing sterility, in another a dysmenorrhea, in another a menorrhagia; in another it may be preparing a fertile field for serious pathological changes. In pregnancy many women will overcome some of these handicaps with varying degrees of incapacities. Some may abort—early or late. Many may pass through this trying period quite normally. We have seen all stages and types of abnormalities, prolonged labors, dystocias, uterine inertias, eclampsia. Most of these problems are best solved if we think osteopathically.

For the woman who comes to the osteopathic physician for examination to determine her fitness to bear a child, much good can be done. Unfortunately this type of consultation is entirely too infrequent. Upon the manner in which we assume the responsibility in this rare opportunity will depend largely the rate of increase in this type of consultation. Upon our examination—upon the kind of examination we give—will depend not only the well-being of this prospective mother through pregnancy and parturition, but also the well-being of the child that has not yet been conceived. So far as this patient is concerned, osteopathy may rightfully earn a place of confidence and respect, or a place of disappointment or insufficiency. All this applies also to the patient who comes early or late in pregnancy. We have been prepared through our osteopathic concept and training to make an examination that none outside our profession can make. Our sensitive fingertips are eager to tell us what they find in their palpation of superficial and deeper soft tissues of the body. They are prepared to tell us of functional disturbances often long before there has been any manifestation of symptoms. Let us not be found wanting in our interpretation of these findings.

Examination of the bony and ligamentous structures is in line with the earliest teachings of Dr. Still. The truth of his principles is verified every day in every office where osteopathy is practiced. I shall shortly mention other fields where these principles have finally been recognized and practiced, but I want to plead that this is your birthright and mine, and we should guard jealously our reputation as pioneers in the field of structural examination and manipulative therapy. Are we sometimes inclined to make our examination a perfunctory procedure and hastily scan the structural anatomy of the patient before us? Or do we think osteopathically to the extent that we always visualize the immediate and remote effects of the structural deviations, and honor the Founder of Osteopathy with the understanding that here is a job in which we are pre-eminent, and that we owe it to our profession that this job above all others we shall do well?

No phase of our thorough physical examination should be omitted. Most often our most valuable information is obtained when we study our patient from the viewpoint of the mechanical engineer—the osteopathic engineer. Consider the picture of faulty posture and its resulting effects upon the general health of the individual, superimpose upon this picture the additional burdens of pregnancy, and we have an increased appreciation of the value and importance of osteopathic therapy in obstetrical practice.

Pelvic examination gives us much information or little, depending upon the thoroughness of that examination. The delicate touch of our palpating fingers is more valuable if we exclude every thought except to assimilate the information they would convey, and correlate our findings with those of the structural examination. Congestion of the pelvic organs is found frequently as a result of chronic lesions, pelvic or spinal. Treatment applied to the bony structures alone is sometimes disappointing in its immediate results. Often the symptoms recur. Our results can be augmented by use of bimanual manipulation, the intrapelvic hand lifting the boggy uterus and adnexa from their congested bed. As in the case of spinal manipulation, we feel the structures relax. The value of intrapelvic manipulation can be increased if in addition to the dorsal recumbent position we shift the patient, the intrapelvic hand remaining intact, to the anterior Sims' position. This facilitates relaxation and gives greater length to the examining fingers. I have found it a valuable aid. On subsequent visits the patient usually reports much relief.

Cervicitis is sometimes the primary cause of pelvic congestion. Use of cautery or electrocoagulation with the spiral electrode gives gratifying results. Leucorrheas of long standing nearly always respond to this treatment if the cause lies in the endocervix. We have eliminated a source of infection, the congestion has been dissipated, and the rule of the artery has been restored.

Laboratory investigations by Dr. Louisa Burns[1] have demonstrated in a most convincing way the effects of bony lesions upon mother and offspring. Ample corroboration has been found in osteopathic practice. Many women who have presented extremely poor prospects for normal delivery have been carried to the conclusion of their term in better health than they had known previously, through the medium of osteopathic manipulative treatment throughout pregnancy. We are asked sometimes if there is contraindication to manipulative treatment during pregnancy. There is no contraindication to normalizing body structures. The specificity of therapy to the exact needs of the patient is found nowhere else as it is in osteopathy. Good judgment is necessary in all instances, and each case should be approached with the respect and consideration it deserves. I remember a warning given my class in school against making sacroiliac corrections during pregnancy. To me this seemed an illogical conclusion, and I have since decided that the real idea this eminent professor had in mind was to teach extreme caution in the manner in which we made lesion corrections in our obstetrical patients. I have appreciated her warning—not to the extent that I made no sacroiliac corrections in pregnancy, but to the extent that I have always kept my mind closely upon the job at hand, and have visualized the effects of my treatment upon the patient. I believe that instructor felt we should be depended upon to use our own best judgment in practice, and that we would eventually properly evaluate her warning. Surely all of us have experienced the thrill of giving grateful relief from much suffering in pregnancies through our manipulative osteopathy, and through the years we have broadened the field of application of our corrective therapy.

In one instance only have I noted an unfavorable reaction, and that was the occurrence of uterine contractions after sacroiliac manipulation. It occurred three or four hours after treatment, following a thirty-mile drive home, and was relieved by an hour of rest. This was in the second trimester. After it occurred a second time, in the same manner, I altered my technic, and thereafter no more difficulty was experienced. I was unable to reach a definite conclusion as to why this should occur, but am inclined to feel there was some psychological influence.

During labor the effects of pathomechanics are variable. Here is another important place where the work of the osteopathic obstetrician is different. In the first stage much can be done to relieve the discomfort of the patient. A careful check of the skeletal structure at this time often reveals need of straightening a twisted pelvis, or other corrective work. The quality of uterine contractures can be influenced through the application of pressure in the lower lumbar region. Change of position, for instance the assuming of the squatting position to aid in straightening the birth canal, is logical corrective therapy. Correction of a sacroiliac subluxation in some instances may mark the difference between normal delivery and the necessity for cesarean section.

The osteopathic profession is not alone today in recognizing the value of the osteopathic concept, though of course no credit is given by the others who recognize it. Osteopathy is condemned by the dominating nonosteopathic medical school, but in the same breath it is advocated that they should wrest the field of "manipulative surgery" from the irregulars. The White House Conference on Child Health and Protection defined body mechanics as:

> The mechanical correlation of the various systems of the body with special reference to the skeletal, muscular and visceral systems and their neurological associations. Normal body mechanics may be said to obtain when this mechanical correlation is most favorable to the function of these systems.[2]

These thoughts, expressed by Dr. Still more than a half century earlier, are some of the fundamentals upon which he founded osteopathy. More and more in allopathic literature we note recognition of the principle that the human body is a machine, and that upon its proper functioning depends the well-being of the individual. It is replacing many of the old concepts of disease. At a recent meeting of medical neurologists the declaration was made that intelligence of humans is dependent entirely upon the blood supply to the brain—that this factor distinguishes the idiot from the normal person. Most of us in long years of osteopathic practice have seen restored to normal a child whose mental outlook was extremely poor. Birth injuries and other obstacles to normal blood supply have been successfully treated.

We have the advantage of years of osteopathic atmosphere and osteopathic thinking. We have developed an understanding of structural maladjustments and tissue reactions and osteopathic diagnosis that years of study and palpation alone can give. There is no shortcut to the adequate understanding of the human body as a machine. Study of the osteopathic structural lesion and its many ramifications is worthy of our sincerest efforts. It cannot be taught as an adjunct in an allopathic school. Its diagnosis and treatment compose an intricate and highly specialized field. The osteopathic profession should remain pre-eminent in the field of posture, in the field of body mechanics, in the recognition and treatment of pathomechanics, and in general practice where for a half century, unrecognized except in our own ranks and with our patients, we have remained outstanding for our work in preventive medicine. Gradually we are drawing nearer the day when the practice of osteopathy will more closely approach a true scientific accuracy.

In his book "Body Mechanics," Goldthwait[3] looks upon the body from the viewpoint of the mechanical engineer, and says:

> He knows very well that although, to all outward appearances, it may be working to full capacity, there may be detectable signs of wear which must mean a breakdown in the near future. The less well aligned, the more strain and wear there must be and the greater is the potential of trouble. The malalignment or faulty mechanics of the human machine is likewise a potential of trouble and it should be recognized by the physician as such.

He recognizes freely faulty body mechanics as the underlying factor in most chronic diseases. He dedicates his book "to the chronic patient." It contains much good osteopathy. The statement that organic diseases were first functional diseases finds ready appreciation by the osteopathic physician, for he has long made use of this truth. Specifically referring to pregnancy, Goldthwait says:

> Much of the gynecological disability and long period of weakness following some pregnancies can be explained on the basis that the compensation for long-standing faulty body mechanics has been broken by the burden of pregnancy and parturition and when once broken, the badly used body is unable to regain its compensation and strength. A proper understanding of the principles and practice of the correction of faulty body mechanics would save much of this trouble.

We may profit by observing what he says further and apply it to our experience in the treatment of pelvic disorders:

> The pelvic organs in the female are one of the commonest sites of malignant disease and here again, even more than elsewhere, are the same factors of chronic congestion and irritation.

This is not new to us. Our osteopathic literature is a much richer source of information on these subjects. The comparison is interesting, however, and if it will help bring to us the realization that we have in our own storehouses an enormous wealth of knowledge and information that has not yet been touched upon outside our profession, it may stimulate us to an increased appreciation of the teachings of the pioneers of yesterday and today in osteopathy. It will do much to keep us far in the lead in the understanding of pathomechanics in obstetrics, and the therapeutic field in general. We deserve rightfully to hold that lead, and only our own apathy will cause us to relinquish the advantage upon which our success in practice has been founded.

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Gynecological Diagnoses: An Osteopathic Concept*

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Gynecological diagnosis does not differ in principle from diagnosis in any other field; it requires the same attention to careful case history taking, and a knowledge of etiologic factors and symptomatology, as well as of proper methods of physical and laboratory examination. Added to this is the seemingly intuitive knowledge that the skillful diagnostician has, which upon analysis is only a thorough grasp of the essentials of disease processes, plus keen observation, attention to detail, and the habit of deduction.

The space available permits touching upon only a few points in gynecological diagnosis which are apt to be overlooked not only by the general practitioner, but also all too often by the gynecologic specialist. It is said that the novice in diagnosis is most apt to overlook unusual forms of some common disease while the more experienced person or specialist is more apt to fail in the recognition of some rare condition.

The matter of getting a complete case history cannot be too strongly stressed; many glaring errors in diagnosis have been caused by failure to elicit some one fact in the history, which was actually the pivotal point in correct diagnosis of the patient's ailment. An example of the importance of careful case history taking is seen in what is possibly the most pertinent point in the questioning of all gynecologic patients—the matter of the date of the last menstruation. Failure to get this information is surprisingly common, and has led to many serious errors in diagnosis, such as overlooking an ectopic gestation, or mistaking the enlargement of a pregnant uterus for a fibroid tumor.

The grouping of diseases under certain prominent symptoms seems to be the natural method followed almost unconsciously, and greatly facilitates diagnosis. In a few cases the diagnosis is apparent from a few prominent facts, but in most cases it can be established only by a searching analysis of all the information obtainable in the history and physical and laboratory examination. It is this critical analysis and testing, with elimination of all conditions that do not stand the test, which makes the difference between a reliable and an unreliable diagnostician.

Disturbing symptoms in the lower abdomen and back do not always mean genital disease. Many of the serious mistakes in diagnosis arise not so much from ignorance of the symptoms of the various diseases as from the fact that the possibility of trouble in some surrounding or associated structure is not kept in mind. The pelvis cannot be considered a separate division of the organism; it is closely associated either by direct contact or through the blood and nerve supply with many other structures. In this connection must be considered conditions of the skeletal structure as well as the digestive, urinary, endocrine, and nervous systems.

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Of particular importance to us as osteopathic physicians is the relation of pelvic disease to low-back disturbance. The gynecologist is being consulted continually by patients who attribute all of their low-back pains to disturbances of the pelvic organs; when in reality the difficulty is some orthopedic problem of the back itself. The backache resulting from sacroiliac or fifth lumbar joint lesions and muscular strains involving the sacral and lower lumbar regions is indistinguishable to the patient from that produced by a retrodisplacement of the uterus. An arthritic condition of the sacroiliac or lumbar articulations, or various anomalies of the bony structure in these regions produces symptoms markedly simulating those of pelvic disease.

Here again a careful history may materially aid in the search for the causative factor. All too frequently a history of trauma to the back, which might be the clew to correct diagnosis, may be overlooked. It is said that only about 25 per cent of all low-back disturbances are actually the result of pelvic disease, the remaining 75 per cent being caused by intrinsic pathology in the back itself. In this connection we might say that backache above the lower lumbar and sacral region is rarely pelvic in origin.

Not infrequently pain and tenderness felt in the lower abdominal quadrants are caused by sacroiliac joint abnormalities. They are all too frequently overlooked even by our profession and give rise to many mistaken diagnoses of pelvic disease. Kelly[1] in his textbook on "Gynecology," in a chapter on backache mentions this symptom in connection with so-called sacroiliac strain. The gynecologist must therefore be on the lookout constantly for these spinal conditions which may closely simulate the picture of pelvic disease. On the reverse side of the question, however, is the fact that not infrequently in the search to find the source of the trouble in the back itself some aggravating pelvic pathology is completely overlooked.

The question whether a retrodisplacement of the uterus, particularly when there is mobility, may be the cause of low-back symptoms, is frequently a disputed one. To anyone who has had any considerable experience in observing and treating these cases it seems indisputable that this can be, and frequently is, the case. It seems to be not so much the congestive state in the uterus itself, produced by the torsion of the broad ligaments and consequent interference with venous and lymphatic drainage, as it is the pull on the ligamentous attachments by the heavy sagging organ. In fact, Crossen[2] says that in retrodisplacement a uterus firmly adherent and completely immobilized frequently gives less symptoms than one freely movable and dragging on its natural attachments. The relief, not only of backache but also of other symptoms, such as menorrhagia and constipation (of which many of these patients

complain), when the uterus is temporarily held in normal position by a retroversion pessary, is proof that the displacement is really producing the symptoms present, and when there is any doubt as to their actual origin, this is a valuable measure in differential diagnosis.

A condition frequently encountered in gynecological practice is the congenital type of retrodisplacement, either a retrocession or a retroflexion. This type of displacement is frequently found associated with general infantilism or constitutional inferiority, as manifested in faulty development of the gastrointestinal tract with a tendency to generalized visceroptosis, as well as evidence of faulty skeletal structure and muscular development. The endocrine and autonomic nervous systems also show faulty development and function, and these girls and women are usually asthenic, nervous and underweight, with a symptom complex in which it is difficult to distinguish between ailments actually caused by physical defects and those resulting from a frequent tendency to superimposed neurosis. While it is true that infantilism confined to the pelvic region is sometimes seen, the picture of a more general failure of development is by far commoner.

All too frequently the pelvic abnormality in this type of patient is stressed too much as a cause of the complex symptomatology and we see these unfortunates subjected to various pelvic operations and long courses of pelvic treatment, while the faulty body mechanics and general visceroptosis are completely lost sight of. Treatment in this condition cannot be narrowed down to the correction of one defective structure, but must take into account the muscular and skeletal structures, and the all-too-frequent superimposed neurosis.

The supporting attachments of all the abdominal viscera may be defective, and in addition to these there are certain predisposing causes such as acquired changes in the body form of the individual from loss of subperitoneal fat, and from deficiencies in the tone of the abdominal and spinal musculature. The congenital is more common than the acquired type of visceroptosis; in fact in most cases of apparently acquired ptosis, errors in structure of a congenital nature can be traced.

The contributing factors are faulty posture acquired in childhood, early lack of normal nutrition, habitual constipation, long-continued errors of posture from certain occupations, neglect of muscular exercise, relaxation incident to childbearing, and loss of body fat. The victim of acquired ptosis shows a general drooping of the body. The shoulders are dragged downward and forward, lowering and compressing the chest wall. The contraction of the ribs diminishes the upper abdominal cavity, which should be large and roomy. This, together with the relaxation of the anterior abdominal muscles, permits the large abdominal organs to be crowded downward into the pelvic region. Compensatory changes in the body framework alter the inclination of the pelvis with consequent strain on the muscles of the back and sacroiliac articulations. While in a majority of cases there are congenital defects in the supporting structures of the pelvic viscera, acquired changes in posture and abnormally disposed intraabdominal pressure act to produce uterine retrodisplacements, and ovarian prolapse.

Therefore it is not only the problem of the gynecologist but also of the orthopedist, the internist, and occasionally the general surgeon. Only a comprehensive view of the problem will serve the best interests of the patient.

A frequently overlooked cause of low-back pain is a low-grade parametritis or cellulitis of the sacrouterine ligaments, the two folds of peritoneum augmented with connective and smooth muscle tissue, directed upward and backward from the upper part of the cervix to the anterior surface of the sacrum, serving to hold the cervix in its normal backward position in the posterior vaginal vault. A cellulitis in these ligaments is most commonly produced by a chronic cervicitis, but may be the end result of an acute pelvic inflammation from postpartum or postabortal infection. In chronic cervicitis, infection is carried to these ligaments through the lymphatics, and it is this complication which is usually the cause of the low backache commonly accompanying this condition. Another important point in this connection is the possibility of cervical infection acting as a focus from which a variety of conditions may originate, including arthritic changes in the sacroiliac joints. While many have questioned the importance of the cervix as a focal point of infection, it becomes increasingly apparent that the cervical glands should not be overlooked when such a focus is being sought. The continuation of low-back symptoms even when the cervical pathology is removed is always suggestive of arthritic changes in the spinal articulations too far advanced to be entirely relieved by the removal of the original infecting focus.

The cervix as a focus of infection in elderly patients past the menopause is very commonly overlooked. Cervical stenosis is fairly frequent at this time on account of atrophic changes in the uterus; and imperfect or complete absence of drainage from infected cervical glands having surprisingly large pus collections, may result. Dilatation and drainage often results in the relief of a variety of toxic disturbances, which had failed to respond to other measures.

The close association existing between the gastrointestinal tract and the pelvis is frequently lost sight of. Appendicitis, for instance, is a much commoner condition in young women than is generally recognized. Frequently a mild acute attack is attributed to simple indigestion or mild food poisoning. Development anomalies of the intestine resulting in imperfect blood circulation and lymph drainage favor the development of appendiceal inflammation. Some investigators have reported finding evidence of inflammatory changes in the appendix in 60 per cent of female cadavers dissected.

Differential diagnosis of appendicitis and inflammation in the uterine adnexa, is not always as simple as the textbooks would lead one to believe; in fact this difficulty probably leads to more unnecessary surgery than any other diagnostic problem in the pelvis. Frequently the appendix and the right adnexa are very closely associated, especially where the appendix is long or occupies a low

position, its tip lying in close proximity or in actual contact with the pelvic structures. Most frequently the tube and ovary are involved secondarily to the appendix, gravity favoring the downward extension of infection through the peritoneal lymphatics, but occasionally the mode of extension is reversed, a periappendicitis being secondary to a right salpingitis.

The necessity of determining which structure is primarily involved becomes apparent, when we consider that acute appendicitis usually calls for immediate surgical intervention while acute inflammation of the adnexa calls for conservative care. A careful case history as to the mode of onset of the difficulty will often be of great aid in differential diagnosis. Vomiting is more common in appendiceal involvement, occurs earlier, often before actual pain develops, and is more persistent. Pain in case of appendicitis is often more general in character, at the start frequently appearing first in the epigastrium or right upper quadrant, later localizing somewhere in the region of McBurney's point. We must remember, however, that a few cases may show a coincidental primary appendiceal and tubal inflammation.

Chronic appendicitis is a frequently overlooked cause of dysmenorrhea, especially when the appendix has a pelvic position or adhesions about it involve the right adnexal region. A history of chronic constipation with more or less digestive disturbance, such as intestinal flatulence and attacks of nausea and vomiting associated with right lower quadrant pain is very suggestive of chronic appendicitis. Diagnosis should be confirmed, in most instances, by x-ray before surgery is undertaken, since these signs are not always definitely indicative of an appendix involvement.

A frequent cause of error in pelvic diagnosis is failure to recognize lesions of the urinary tract which may give rise to symptoms readily confused with those originating in the genitalia. The most common are conditions of the ureters, such as ureteritis, nephroptosis with kinking of the ureter, and ureteral stricture of the pelvic portion. Any of these may cause lower quadrant pain, readily confused with adnexal disease.

The chief reason for not making a distinction is failure to palpate the enlarged tender adnexa. A diagnosis of adnexal inflammation cannot be made with certainty unless the structures can be definitely outlined. The importance of careful examination and the necessity of acquiring some degree of skill in differentiating the structures palpated in this as well as in all pelvic conditions cannot be stressed too strongly. In the pelvis, through the vagina and rectum we have an opportunity to palpate and outline organs bimanually in a way not possible in the upper abdomen and this is our chief diagnostic aid. Rectoabdominal palpation should not be neglected. In fact it should be a routine part of every pelvic examination, since examination of the pelvic structures posteriorly enables one to get a much clearer picture than can be obtained by the vaginoabdominal procedure alone. This particularly applies in inflammatory conditions of the adnexa when the unusual weight of these organs as a result of congestion, causes them to gravitate to the back part of the pelvis.

In ureteritis the entire course of the ureter shows sensitiveness, especially noticeable at the point where the ureter crosses the pelvic brim, which corresponds to a point in a line between the umbilicus and anterior superior iliac spine one and one-half inches from the umbilicus, which, on the right side, is slightly internal to McBurney's point. There is usually evidence of cystitis and pyelitis on the affected side.

Nephroptosis with kinking of the ureter causing some degree of hydronephrosis may also give lower quadrant pain. There is usually a positive Murphy's punch sign elicited in the costospinal angle, caused by pressure in the kidney pelvis, although no infection may be present and the urinalysis may be negative. Nephroptosis is more commonly seen in younger patients who are underweight, with the elongated type of torso and exhibiting a tendency to ptosis of other organs. It may be found, however, in women of a more obese type whose supportive structures are not adequate. Cystoscopic examination, with x-ray visualization of the ureters and kidneys, establishes the diagnosis of movable kidney.

Ureteral stricture, while not as common as nephroptosis with ureteral kinking, is the most commonly overlooked ureteral condition confused with adnexal disease. The most common site of such obstruction is the pelvic portion of the ureter as it passes through the lower part of the broad ligament to enter the posterior bladder wall. Previous pelvic inflammation involving the cellular tissue of the broad ligament, or pelvic operations with consequent scar tissue, are the most frequent cases of impingement and stenosis of the ureters at this point.

The symptoms are somewhat vague at times, taking the form of bearing-down pain and sense of pressure in the affected side, especially at the menstrual period, and bladder irritability which at times makes the patient's life almost unbearable. There may be evidence of hydronephrosis as revealed by pain in the kidney region and in extreme cases by palpable enlargement of the kidney. The fact that the symptoms are aggravated by the pelvic congestion incident to menstruation makes diagnosis confusing, and all too often patients are subjected to unnecessary pelvic surgery with no relief, and frequently aggravation of their symptoms. A careful bimanual examination in these cases will disclose the tender thickened ureter in the lateral vaginal vault close to the cervix, and ureteral exploration through the cystoscope will establish the diagnosis.

The question of diagnosis of the different endocrine disturbances affecting the reproductive mechanism is a complex one and can be only touched upon here. At the present time it is well known that the majority of functional menstrual disturbances come under the heading of primary anterior pituitary, primary ovarian, and primary thyroid hypofunction; with a lesser number being due to the adrenals, pancreas, etc. The greatest error in the management of these cases is failure to determine the gland primarily at fault, and also to locate the underlying cause of the dysfunction. While in most cases there is evidence of pluriglandular disturbance, the prevailing tendency is to regard some one gland primarily at fault, usually one of

the three mentioned. Sometimes because of the confusing symptomatology, exact diagnosis is impossible at the start and can be determined only by the trial and error method in the therapy used. Unfortunately many of the biologic tests used by the research workers which are so valuable in differential diagnosis are not yet practical for the practitioner, although they probably will come into as common use as time goes on, as the well-known Aschheim-Zondek pregnancy test.

Mazer and Goldstein[3] gave us the first really practical basis for differential diagnosis in dysfunction of these different glands as related to the reproductive mechanism, and while advances have been made since their work came out, their classification is still generally accepted.

The determination of the underlying cause of glandular disturbance often requires a painstaking search, but is absolutely necessary if any certain results in treatment are to be obtained. Many highly potent and valuable endocrine products are being misused and wasted because these original etiologic factors are not found and corrected.

The etiology ranges from hereditary tendency, through nutritional disturbances as a result of faulty diet, chronic constitutional disease, the acute infections, toxins from focal infection and nervous influences, to spinal joint lesions, which particularly interest the osteopathic physician. Burns[4] has demonstrated in her animal research work that spinal joint lesions will produce not only glandular dysfunction in the lesioned animals, but also a tendency to similar disturbance in their offspring. This opens up a field of preventive treatment in the human which we cannot afford to neglect.

The demands made upon the body economy and nervous reserve of the adolescent girl are much greater than those made upon the boy at a similar period, and neglect of proper diet and general hygiene at this period often lays the basis for future disturbance of the menstrual function. Impressing parents with the necessity of proper attention during puberty cannot be stressed too strongly, and the elimination of inhibiting factors to glandular function is a prerequisite to the establishment of normal reproductive activity. The natural tendency at any age, and especially in girls during the growth period, is to the establishment of the normal menstrual function once these inhibitions are removed, and this fact must be kept in mind in the treatment of glandular disorders. Frequently credit is given to some endocrine preparation when the cure is actually a natural response to the removal of some depressing factor.

Infections of the lower genital tract have been the subject of much interest, especially in the last five years. It is significant that in this field there is a tendency to approach the problem from the biochemical standpoint; in other words, an effort to determine the cause of lowered resistance to infections in the female vaginal tract.

The normally high resistance in the adult vagina is attributed to the normal acidity of the vaginal secretions, which in turn is thought to be caused by the presence of Döderlein's bacillus. This organism utilizes glycogen granules which under normal conditions are deposited in the vaginal mucosa, for the manufacture of lactic acid, producing an unfavorable medium for the propagation of most pathogenic organisms.

It has been found that women receiving a diet deficient in vitamin A have a low vaginal acidity on account of a disturbance in glycogen metabolism and are unduly susceptible to all types of infections, especially to the parasite, *Trichomonas vaginalis*.

Normal ovarian activity also seems closely allied to vaginal acidity, which accounts for the comparatively low acid reaction in the girl before puberty and in the woman in the postmenopausal state, and in part, at least, for the lower resistance exhibited by the vaginal mucosa during these periods. While so-called senile vaginitis in the older woman has been attributed entirely to the cessation of ovarian activity, it has been found that dietary deficiencies play a large part in its production.

Gonorrheal infection in the female has a higher incidence at the present time than is generally recognized and many cases in the chronic stage, or even in the mild acute form, are not diagnosed as such; consequently they do not receive adequate treatment to eradicate the disease completely. Laboratory diagnosis in the chronic stage is often difficult, since the intracellular organisms tend to disappear. The presence of extracellular diplococci, together with a typical cervical discharge, or evidence of infection in Skene's ducts, is really diagnostic of the infection.

The trained observer readily recognizes the characteristic ropy, purulent discharge of gonorrheal cervicitis, and while Skene's duct involvement is not as common as the focus in the cervical glands, it is considered diagnostic of chronic gonorrhea by Curtis,[5] one of the foremost authorities on pelvic infections. The history of an acute attack following sexual contact and the presence of a bilateral salpingitis are also useful diagnostic points. The complement-fixation test, which is comparable to the Wassermann test in syphilis, is of little value in cases of infection which have not spread above the cervix, since it is seldom positive even when stained slides show the gonococcus. It is very valuable, however, in the diagnosis of tubal involvement, in which it is usually positive. A negative result does not rule out the possibility of the infection.

The *Trichomonas vaginalis* parasite frequently goes unrecognized as a cause of a very chronic and persistent type of vaginal discharge, in spite of the fact that much has been written of its diagnosis and treatment in the past few years. The origin of this organism is still undetermined, some believing that it is transferred directly from the rectum to the vagina, others holding the idea that it is contacted from toilet seats, contaminated linen, etc. That it may be transmitted by sexual contact is possible since it is found in the male urethra, but the large number of infections seen in virgins shows that this is not the common origin.

Clinically it may readily be mistaken for gonorrhea, since it causes a severe type of inflammation with a free purulent discharge. Points in differential diagnosis, however, are the characteristic foamy appearance of the discharge, the infrequency of cervical involvement, and the greater tendency to cause marked irritation and excoriation of the vulval

mucosa and integument about the perineum and anus, even of the inner surfaces of the thighs. The *Trichomonas vaginalis* is a very frequent secondary infection to the gonococcus and often accounts for a persistent discharge following the disappearance of the original organisms. A suspension of the secretion in a warm normal saline solution will show the motile organisms when a hanging drop is examined and will establish the cause of the persistent symptoms.

In especially stubborn cases of the infection the matter of adequate vitamin A intake should be investigated, and frequently a course of cod liver oil or haliver oil, and adequate amounts of butter, milk, eggs, and meat in the diet, will materially aid in affecting cure.

It is apparent that modern gynecological diagnosis involves not only the recognition of disease conditions, but also of underlying basic causes. This always has been the ideal toward which osteopathy has led, and if we are to remain leaders, we must broaden our outlook and knowledge to embrace all possible factors which may underlie morbid tissue reaction.

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To Measure Pressure Employed in Manipulations

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Certain experiments now in progress have led to a review of the devices employed in measuring the pressure used in producing lesions in experimental animals. Such devices were used at Sunny Slope about ten years ago, and at intervals since. A report is made at this time because a method of measuring such pressure may facilitate uniform reports from distant laboratories and clinics. The methods, of course, can be employed for determining the pressure used in correcting lesions as well as in producing them.

MANOMETRIC DEVICES

Apparatus required is simple. Secure a mercury manometer, an air pump, a rubber bulb, a three-way connection of glass or metal, rubber tubing, and glass tube of sizes suitable for connecting these items.

Manometer and air pump may be taken from a sphygmomanometer of the mercury type. Rubber tubing must be fairly rigid; that used in the sphygmomanometer is suitable.

The metal three-way may have valves for closing off one arm from the others. If a glass three-way is used, a pinch-cock should be placed on rubber tubing leading from each arm.

The rubber bulb must vary in rigidity according to the size of the animal and the amount of pressure probably to be employed. Too thin a bulb may break under high pressure; too rigid a bulb may fail to register low pressures accurately. For a small, delicate laboratory animal, the end of the finger of a rubber glove tied over a glass tube serves very well. For larger animals and for human subjects, larger and more rigid bulbs may be bought, or may be taken from an atomizer, camera, or certain types of toys.

Connect the air pump to one arm of the three-way, the rubber bulb to another and the manometer to the third. Use rubber tubing long enough for convenience in handling the apparatus, varying according to the character of the animal and the location of the lesion to be produced or corrected.

Fill the apparatus with air, using the air pump. Pinch off the air pump. Press upon the rubber bulb, noting the efficiency of the apparatus. Evidence of leakage should be noted and leaks repaired. Very slight leakages may be unavoidable and these do not affect the results since the time required is brief. The apparatus may be refilled with air by means of air pump; the pump must then be disconnected as before.

To produce the lesion:

It is understood that the anatomical relations of the tissues to be affected and the nature of the lesion to be produced are well known before the work is begun. This factor is of first importance.

Anesthesia may or may not be indicated. If the animal resists restraint, light anesthesia is desirable. There is no pain or discomfort associated with the process other than that due to restraint.

Place the animal on a table near the manometer apparatus. Arrange supports so that only the bone to be lesioned can be moved easily. Move this bone to its normal limit in the direction selected for the lesion. Place the rubber bulb over a prominent part of this bone, in such a position that pressure from the bulb tends to push the bone slightly further than the normal limit in the selected direction.

Pressure upon the rubber bulb, it must be remembered, is transmitted equally in every direction through the apparatus to the mercury manometer and is registered by the column of mercury in the manometer tube.

Force a rod, or a finger, against the rubber bulb, opposite the bony application. Increase the pressure by 5 mm. or 10 mm. intervals. Hold steadily for 30 seconds to 90 seconds at each interval.

During one of these rests, usually, the lesion is produced, and its occurrence is indicated by a slight but sudden drop in the mercury column.

When the tissues yield, the pressure within the rubber bulb is thereby lessened slightly; this causes the drop in the mercury column, though the position of the rod or finger upon the bulb remains unchanged. The drop rarely exceeds 5 mm., even in a large animal or human.

Remove the pressure and examine the animal. The selected bone should be found in the desired position,

very slightly beyond its normal range of movement. The lesion so produced is palpable and is usually persistent.

Allow the animal to recover from the anesthesia and return it to its cage. It should show certain immediate effects of the lesion, but should not be seriously disturbed. Within a few hours or a day or two, diminished range of movement in the affected articulation and edema and rigor of the adjacent muscles and other tissues are palpable. Time relations vary according to the size of the animal and the location of the lesion.

Immediate and later effects of the lesion vary according to its location. All mammals studied at Sunny Slope show almost exactly the same effects from a given lesion. Human subjects usually present complicating factors, for obvious reasons.

If the animal is killed and dissected immediately after the lesioning, some slight congestion and edema in the surrounding tissues may or may not be perceptible. Any hemorrhage per rhexin indicates faulty technique. Congestion and functional changes in viscera related to the spinal segment involved are recognizable, though they may be slight in degree.

If the animal is killed and dissected within two days or subsequently, congestion, edema and other changes around the lesion are perceptible, and related viscera show congestion, edema, and various evidences of cell degeneration. All these pathological conditions have been described in previous reports, published in THE JOURAL during twenty years.

This method of measuring pressure requires experience and skill, as does every other delicate test. With some experience, however, the results should be uniform and accurate within the limits of the apparatus.

The following pressures concerned in lesioning have been so measured; they conform to the palpable variations noted when lesions have been produced by ordinary manipulations.

Rabbits, 2 days old, second thoracic lesion, 5 cases ..... 30 mm. Hg.
Rabbits, 10 days, second thoracic lesion, 8 cases ..... 60 mm. Hg.
Rabbits, 10 months, second lumbar lesion, 10 cases ..... 180 mm. Hg.
Guinea pig, 2 days old, atlas lesion, 5 cases.... 30 mm. Hg.
Guinea pig, 2 days, occiput lesion, 5 cases..... 30 mm. Hg.
Guinea pig, 5 weeks old, occiput lesion, 8 cases ..... 80 mm. Hg
Guinea pig, young adult (age unknown) atlas, 1 case ..... 120 mm. Hg.
Guinea pig, 10 months, atlas lesion, 1 case..... 125 mm. Hg.
Guinea pig, 10 months old, second lumbar lesion, 10 cases..... 160 mm. Hg.
Kitten, 3 days old, second thoracic lesion, 2 cases ..... 45 mm. Hg.
Kid, 2 days old, second thoracic lesion, 1 case, ... more than 400 mm. Hg.

In the case of the kid, the pressure could not be measured, because the manometer used indicated only 400 mm. Hg.

Individual variations were never more than the limits of accuracy of the apparatus employed.

Drs. Laura Tweed, Helen Gibbon, W. J. Vollbrecht and W. M. McMullen helped in devising and in using these methods.

Sunny Slope Laboratory.

The Three Primary Brain Vesicles and the Three Cranial Vertebrae

III. The Prosencephalon and the Mesencephalon

(Concluded)

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EFFECTS OF BASILAR LESIONS ON PROSENCEPHALIC AND MESENCEPHALIC FUNCTION

It is not necessary here again to review the anatomy of the intracranium. The formation of the three intracranial fossae; the fact that each fossa corresponds to the basilar intracranial contours of one of the three respective cranial vertebrae; the dural membranes and the fact that these membranes by their contours and by their attachments can be seen as dynamic factors in intracranial physiology; and that because of attachments at strategic points on the movable bones of the plastic base the tension of these dural structures is alterable directly with the motility of these osseous portions of the plastic basicranium; the fact that this alteration of dural tension is physiologic in its implications, as for instance the tensing and relaxing of the tympanum sellae, of the falx cerebri, of the tentorium cerebelli, and, therefore of the walls of the intracranial sinuses, and importantly in its relation to the hypophysis, of the walls of the cavernous sinus; the fact that traumatic alteration of basilar motility would so alter these physiologic dynamics of these dural structures as to constitute pathology; the blood supply of the intracranial contents; the fact that the anterior and middle portions of the hemispheres and all of the balance of the prosencephalon receive arterial blood exclusively from the internal carotids; the fact that the internal carotid enters the intracranium through one of the most readily traumatizable of all the apertures of the base, i.e., the intervertebral foramen between the second and third cranial vertebrae (the foramen lacerum); the fact that the vertebrals after purveying the total arterial supply to the rhombencephalon receive anastomoses from the internal carotids before they purvey to the mesencephalon and to the overlying posterior lobe of the prosencephalon; all of these have been presented with their full import in the Tuesday morning sessions of my Postgraduate Clinic for the Study of Nervous and Mental Diseases, and have been ably stated in the article, "The Intracranium," by Earle E. Sanborn, B.S., D.O.[1]

In my own article, "Etiologic Importance of the Cranial Intervertebral Articulations,"[2] I stated the following conclusions:

i. Disarrangements of the normal relationships of the parts of the cranial vertebral formations which compose the plastic basicranium will (1) change the intrinsic mechanics of the special dural arrangements which exist normally in the cranial fossae as a series of physiologic dynamisms which are of the greatest importance to the organism; (2) alter the contours of the foramen lacerum.

ii. There are three chief intracranial formations in which the expectancy of the occurrence of pathology either of (1) function, or of (2) organic structure, or of (3) both function and structure, as a direct result of lesioning of the cranial intercentral articulations is a legitimate expectancy. These formations are (1) the sella turcica and its contents, (2) the dural sinuses of

the base; the cavernous especially and its tributaries; but, also, the petrosal and other basilar sinuses, and (3) the foramen lacerum and the petrosal and intracranial portions of the internal carotids.

I made the statement also that,

The remote results of local pathology arising as effects of cranial intervertebral lesions will be discussed in a forthcoming article.

SOME SPECIAL APPLICATIONS IN THE NERVOUS AND MENTAL FIELD

Progressive Posttraumatic Pituitary Failure.—From among the great groups of nervous and mental pathologies which have remained unexplored as to cause, and therefore have remained hopeless as to cure, I have differentiated *progressive posttraumatic pituitary failure** which is due to lesioning of the base which affects the hypophysis directly. The symptom syndrome, differential diagnosis, progressive picture, special groups of findings at different stages of the disease as it progresses, its prognosis which is always death after a long drawn out progression of clinical manifestations (unless corrective therapy of the base is successfully accomplished), due directly to the condition itself and not to some intercurrent condition, all this I have reported upon before several osteopathic organizations including among others the British Osteopathic Association in 1933, the Nervous and Mental Diseases Section of the American Osteopathic Association during convention at Cleveland in 1935, the Akron District Osteopathic Society in 1936, and the Philadelphia County Osteopathic Association in 1933.

Anterior Cerebral Atrophic Amentia, due to traumatic occlusion of the anterior cerebral branch of the internal carotid artery at its origin from the internal carotid just within the intracranial border of the foramen lacerum, is a condition which I have differentiated with its complete symptom syndrome, obstetrical etiology, prognosis which is hopeless idiocy without the indicated specialized osteopathic operative procedure successfully directed toward the realignment of the traumatized plastic base, prognosis when this therapy has been successfully applied which is slow and gradual but certain growth toward normalization of the starved cells of the anterior cerebral purveyance regions. I have reported upon anterior cerebral atrophic amentia before the Osteopathic Women's National Association during the National convention of the A.O.A. in New York in 1936.

A Pseudo, or Partial, Deaf-Mutism.—This condition, due to traumatic alteration of the lumen of the left parietotemporal branch of the left middle cerebral attending gross misalignment of the centrum of the second cranial vertebra, which is readily discernible in x-ray plates, was studied in the Tuesday morning sessions of the Postgraduate Clinic for the Study of Nervous and Mental Diseases and reported upon by myself during the Annual Postgraduate All-Day Meeting of the study clinic. Prognosis without indicated corrective therapy is regression to more and more retarded levels. Prognosis with correction is spontaneous and progressive return toward normal.

I have established, also, through a creditable series of case studies, the fact that perhaps without any exceptions those sequelae of birth injuries which are known as Little's disease, birth palsies, the obstetrical pareses, cerebral hemiplegias, monoplegias, diplegias, all of which are due to *obstetrically induced deep cerebral hemorrhage† are always found in connection with drastic obstetrical lesioning of the articulations of the base in the relation of effect to cause;* that is, *it is the drastic basilar misalignment in each instance which is etiologic of the cerebral hemorrhage: unless the plastic base were first so completely obstetrically traumatized as to induce secondary traumatization of the intracranial contents, these hemorrhages would not occur.* (In this connection see "Obstetrical Lesioning of the Base" by N. A. Ulrich, D.O.[8]) In this same connection; whether the lenticulostriate artery which is called, sometimes, the artery of cerebral hemorrhage because of its so frequent rupture, a deep branch of the middle cerebral, displays this tendency to extraobstetrical rupture more frequently in heads in which the bases show unmistakable evidence of retained preossific traumatization, or whether this same tendency to extraobstetrical rupture is to be found with the same frequency in the heads showing an absolutely normal base, is a question which a sufficient number of the right kind of x-ray studies of the skulls of apoplectic patients, correctly made, correctly read, and correctly interpreted, would authentically determine. A chin-vertex stereoscopic series of three, and a stereoscopic series of three lateral parietal directed obliquely through the base would be requisite in each case.

SOME SPECIAL APPLICATIONS IN THE MUSCULAR AND NEUROMUSCULAR FIELD

From among the muscular and neuromuscular groups of well-known symptom syndromes the etiologies of which have escaped discovery, I have acquired a growing and as yet unbroken series of studies consisting of case records and family trees and x-ray studies of the *posterior one-third of the posterior lobe of the hypophysis in its relation to the centrum of the first cranial vertebrae (dorsum sellae) in which the centrum is either misaligned, or malformed, or both. This total series is comprised of the muscular dystrophies.* In this connection see plates 6 and 7 with legend which accompanies Plate 7, pages 524 and 525, JOURNAL AMERICAN OSTEOPATHIC ASSOCIATION, July, 1936, "Etiologic Importance of the Cranial Intervertebral Articulation"[2]. My interpretation of the etiology of the connective tissue dystrophies is that it is found in an alteration of the function of this posterior one-third of the posterior lobe of the hypophysis, which alteration *may,* also, be caused in the idiopathic cases by any of the conditions such as infection, cellular invasion, etc., that are known causes of parenchymal deterioration in any organ, but, which, I believe to be caused in the inherited, familial, cases by an obstinate osseous and cartilaginous dominant in these family stocks, such as the inheritable osseous and cartilaginous dominant which produces the famous de Brissac nose in the old French nobility and which is still produced regularly in contemporary issue of that family. In this family the cartilaginous and osseous dominant is a *progressive* one. The nose is large, osseously exquisitely placed and balanced, cartilaginously finely molded, its contours clear and well defined, accompanying a proud, nonhostile, responsibly aggressive, never-to-be-dominated, kind, strong, complex and brilliant personality. There is, also, the famous and historic osseous frontal formations of the Hohenzollern cranium, observable for many generations of unbroken inheritance.

*Case records accrued over a period of eighteen years.

†To be differentiated from superficial meningeal hemorrhage.

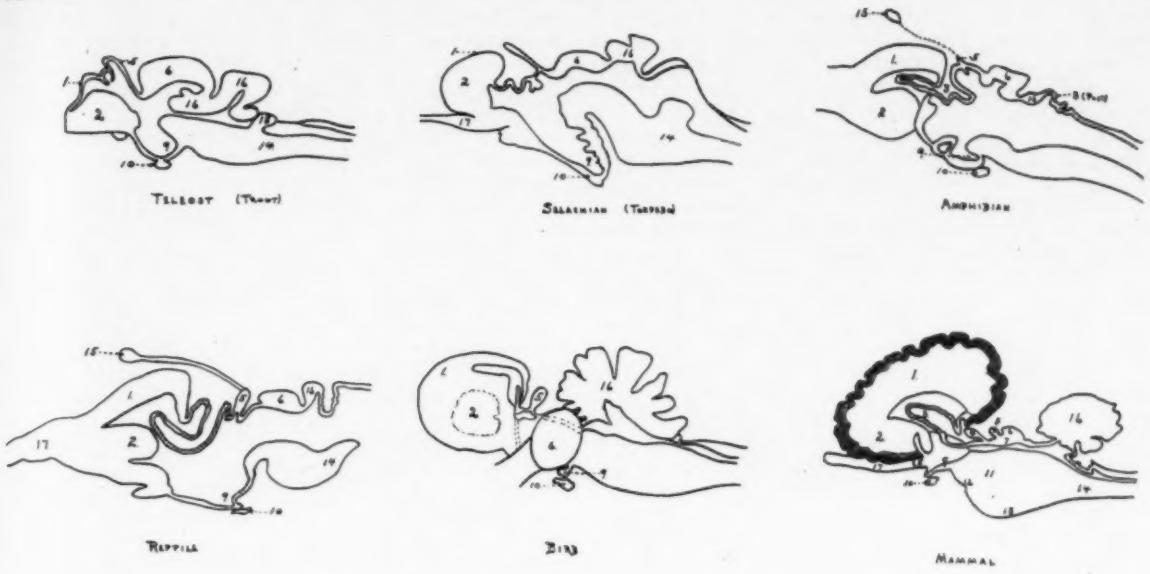


Figure 1.—To show comparative morpholgy of the three primary brain vesicles: (1) Pallium, (2) Corpus Striatum, (3) Choroid Plexus, (4) Optic Thalamus, (5) Epiphysis, (6) Optic lobe of mesencephalon, (7) Corpora Quadrigemina, (8) Optic Tract, (9) Infundibulum, (10) Hypophysis, (11) Tegmentum, (12) Peduncles (Cerebral), (13) Pons, (14) Medulla Oblongata, (15) Parietal Organ, (16) Cerebellum, (17) Olfactory Lobes, (18) Vagus Lobe.

The olfactory apparatus and the corpus striatum form the archipallial portions of the prosencephalon. The "pallium" forms the neopallial portion of the prosencephalon. The two, taken together, form what is known as "the hemispheres."

Note the early rise and development of the archipallium in the early vertebrates, A, B, C; the comparatively modest and retarded development of the true, or neo-pallium, in these same three. Note the reversion of this order as the vertebrate order ascends, D, E, F. The gradual subsidence of the archipallium and the supercedence of the archipallium, or ancient smell-brain, as represented by the olfactory lobe and the corpus striatum, by the neopallium as represented by the "pallium," in F. In the human mammal this supercedence is even more greatly enhanced.

Notice the epiphysis. In teleost the epiphysis and the end organ (pineal organ) are fused almost as one structure. In tornedo the end organ is absent. In anuphibian the end organ or pineal organ is greatly developed, the epiphysis is very small and negligible. In the reptile both the pineal organ and the epiphysis are greatly developed. This includes the caurians. In the bird the pineal end organ is rudimentary In the mammal it is absent; the epiphysis is present. In the human (not shown) the pineal end organ is absent, the epiphysis is present; is very complexly differentiated; is saccular and embryonal at birth; forms concretions of calcium carbonate and calcium phosphate at seven years; continues to form concretions and to grow throughout life, except in cases of senility and certain diseased conditions; is confined deeply within the skull and is not connected with an exposed end organ whereas in the orders below the mammalian it is connected by means of the parietal organ with the external surface, since the parietal organ, either pierces the skull and comes to lie on the outside or lies within a parietal fossa which is covered only with a thin membranous tissue. The ratio of size which exists between the total brain and the epiphysis in the human undergoes a progressive change from birth to death which is similar to the progressive phyletic change in the ratio between the neophallium and the archipallium; that is, the epiphysis grows larger in proportion to the total size of the brain continuously from birth throughout maturity and to death where senility does not intervene. This proportion of the size of the epiphysis to the size of the total brain shows a marked increase at about seven, increases gradually throughout the years from seven to sixty, shows another peak growth between sixty and seventy (in unsenile humans). In the hypophysis, on the contrary, the ratio reaches an extreme peak during the second year, subsides almost to birth level from the third to the fourteenth year, about doubles that (and is still greatly less than the two-year mark) between 15 and 25 and there remains throughout life, meaning that whereas the hypophysis achieves its maximum growth by 25, the epiphysis is still growing beyond seventy years in those individuals who do not become senile.

Illustrations adapted from drawings in "Evolution of Earth and Man." See acknowledgement list to be published at the conclusion of this article.

In the families in which the muscular dystrophies are inheritable as stubborn a cartilaginous and osseous dominant is found. In these families it takes the form of an *underdevelopment* of the final cephalic centrum. In the de Brissac family the condition is an *overdevelopment* of the osseous formations of the hypochordal bow of the first cephalic vertebra. In the Hohenzollerns it is an alteration in the development of the neural arch of the first cephalic vertebra. The extremity of the degree of the humanly tragic results which the failure of development of the centrum of the first cranial vertebra brings about is due to the fact that the anterior tip of the notochord enters, traverses, and passes out of this centrum just as it enters, traverses, and passes out of all other centra of all other vertebrae of the central axis. So that this alteration in development of the centrum of the first cranial vertebra means, in reality, an alteration of the development of the anterior tip of the notochord. In my article, "The Cranial Vertebrae,"[4] I rehearsed the formation of the vertebral centra and their intervening discs by the segmental development of the notochord itself, and differentiated this process of centrum formation from the subsequent formation of the vertebral body and the other vertebral morphological elements. Earlier in this present article I have shown how, in my opinion, the anterior tip of the notochord becomes the posterior one-third of the posterior lobe of the hypophysis in a manner which parallels the development of the anterior two-thirds of the anterior lobe from the anterior tip of the craniopharyngeal duct of the stomodeum. It is this latter formation which is known specifically as the "pituitary gland" and which is to be differentiated, in carefully exact discussion, from the pars intermedia, from the posterior or neural lobe of the hypophysis, from the posterior one-third of the posterior lobe of the hypophysis, and from the hypophysis itself. At still another place in this present article I have spoken of the fact that I believe the posterior one-third of the posterior lobe to be the most anterior tip of the notochord. I wish in the following few paragraphs to present the evidence upon which, in part, my conviction is based.

The notochord has been traced in the human fetus into, and through, the substance of, and to the

superior surface of, the centrum of the first cranial vertebra (dorsum sellae). In diagrammatic schema ii and iiA, and in x-ray studies, plates 4 and 5, pages 518 and 519, JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION, July, 1936, "Etiologic Importance of the Cranial Intervertebral Articulations"[2] and, also, in the text of the article, I showed how what is apparently the anterior surface of this centrum, is, in reality, because of its being bent forward upon itself in the process of the underfolding of the most rostral portion of the cephalic end of the embryo, from above downward, respectively, (see especially diagrammatic schema iiA[2]) the superior portion of the posterior surface, the superior surface, and the anterior surface. In this last-mentioned schema, I showed with interrupted lines the pathway of the notochord through the centrum. In Figure II, p. 139, JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION, December, 1937, I showed by an arrow the path by way of which the notochord leaves the superior surface (apparently the middle portion of the anterior surface) of the centrum and, projecting into the sella turcica, evaginates the capsule, H.C., of the hypophysis, and, by thus pushing the capsule forward and becoming surrounded by it the anterior tip of the notochord becomes incorporated within the posterior lobe of the hypophysis as its posterior one-third. In Figures I-A, I-B, and I-C, p. 188, JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION, January, 1938, illustrating an article entitled "Lesionability of the Basicranium," by E. C. White, D.O.,[5] I showed this aperture in the superior surface of the first series of three figures, but, due to an oversight in checking my materials, permitted the figures II-A, II-B, and II-C to appear with the aperture closed. This is an error. It should be open throughout this B series as it is in the A series.

Another well-known fact concerning the posterior lobe of the hypophysis is that it cannot be lifted out of the sella turcica as can the anterior lobe, but when the attempt to lift it out is persisted in, the posterior lobe tears loose from the balance of the hypophysis and remains fastened to the mid-posterior wall of the fossa, that is, to the middle portion of the anterior surface of the dorsum sellae which is, in reality, the superior surface of the centrum of the first cranial vertebra. From this it cannot be dissected away. It can only be *amputated*.

E. C. White, D.O., verifies this finding of other commentators by his own findings in the human fetus. He gave us his verification verbally in a Tuesday morning session of the study clinic. Further, histologically, the posterior one-third of the posterior lobe differs from the balance of the posterior lobe. In an original article entitled "The Finer Anatomy of the Cerebrum Including the Pituitary Gland," by Henry J. Berkley,[6] writing from the Pathological Laboratory of the Johns Hopkins University and Hospital, gives a minute report of the histology of the posterior lobe, together with excellent illustrations. He describes the posterior portion of the posterior lobe as being tubular, non-neural, mentions capsular elements which appear well within the substance of the lobe, at a place which would be between the anterior portion of the posterior one-third and the posterior portion of the middle one-third, describes the minute histology of the neural, or anterior, two-thirds of the posterior lobe. To anyone who is familiar with Sajous' description[7] of the anterior lobe and the test organ (pars intermedia) which develops in connection with that part of the hypophysis, and who knows, then, also, the facts which I have just brought forward concerning the anatomy and histology of the posterior lobe, and especially of its posterior one-third, the centrum of the first cranial vertebra, the most anterior tip of the notochord, the fact that the posterior lobe must be amputated in order to be removed from the posterior wall of the sella turcica, *the conclusion that the most anterior tip of the notochord and the posterior one-third of the posterior lobe of the hypophysis are one and the same structure* may not seem to be illogical. Add to this the facts which I am about to state concerning the embryonal formation of the notochord and the embryonal formation of the mesoderm in the human fetus and, perhaps, my *conclusion that the posterior one-third of the posterior lobe of the hypophysis is the specific chemosynthetic center of the entire human mesodermal system* may seem well-founded. Especially may this seem so when it is recalled that dessicated hypophyseal posterior lobe maintains muscle tone and accentuates muscle contraction in both striated and unstriated muscle, and that it influences capillary circulation. Add to these facts the fact that mesoderm, i.e., connective tissue, exhibits an evolutional tendency to pass through certain progressive metamorphoses in the organism, and that all stages of these metamorphoses coexist normally in a definite state of interrelated proportional balance within the organism throughout life, that this progressive metamorphosis is as follows:

(1) Mesodermal cells formed

(2) Intercellular substance formed so that in typical connective tissue the intercellular substance predominates over cellular structure in amount

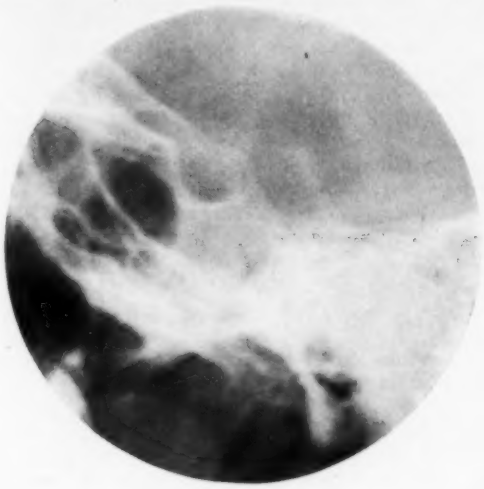
(3) Elastic fibrous tissue formed

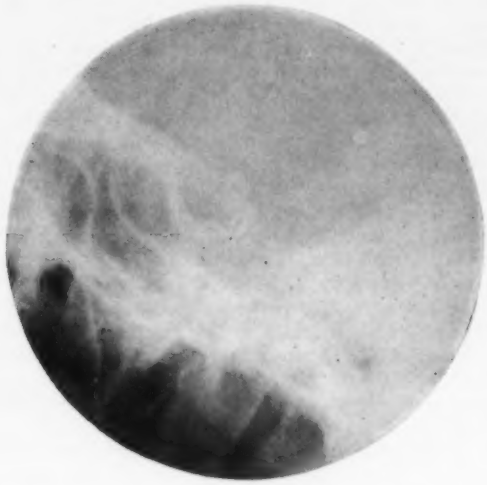
(4) Inelastic fibrous tissue formed

(5) Cartilage formed

(6) Bone formed (true osseous tissue), then, perhaps, the conclusion will be accepted that the mesodermal tissues should not be called the connective tissues, since that name derives in, and has a tendency to foster, the philosophy that the chief function of mesodermal derivatives is that of connecting and holding together the other tissues of the body, and since, than that, no philosophy could be more false or misleading. The mesodermal system in the current human form is the real physical organism. Without it no human central nervous system could develop, without it no endodermal system would be either necessary or of any avail.

If, then, added to this, the old and accredited and false philosophy that ossification is tissue degeneration be junked in favor of the facts that (1) osseous tissue formation is the highest state of mesodermal differentiation, that (2) upon the perfection of its osseous housing depends *not* the primitive formation of a neural tube *but* the perfection of its magnificent progressive cephalad differentiation, that (3) capillary spaces are tissue spaces and that tissue spaces are mesodermal spaces, that lymph is to be seen as mesodermal intercellular substance enduring a highly specialized spatial, and, therefore, structural, control via the lymph channels, then, it seems to me that *all of the mesodermal (connective tissue) dystrophies become understandable as the progressive failure of this governing center of the mesodermal*





Plates 1 and 2 are x-rays of the skulls of two brothers, aged 7 years on the left (plate 1), aged 9 years on the right (plate 2), familial mesodermal dystrophy, pseudohypertrophic, two in family.

X-ray of skull of young man, aged 28 years, familial mesodermal dystrophy. Three in this family had x-ray findings so alike as to be almost identical. Only one of the three is shown here.

X-ray of skull of patient with a diagnosis of sporadic, idiopathic, mesodermal dystrophy. Only one in family. Knee to mid-dorsal region first involved.

system, that is, of the posterior one-third of the posterior lobe of the hypophysis.

I mentioned that there are some facts concerning the embryonal formation of the notochord and the embryonal formation of the mesoderm in the human fetus which I need still to review. They are as follows: In the human embryo the notochord forms as an evagination of the proliferating cells of a definite portion of the embryonal layer of the amnion which are the homologues of the cells which form Hensen's node in the lower vertebrates. This has been discussed in full in "The Cranial Vertebrae."[4] The illustrations which accompany this article taken together with those which appear as Figures I and II in the article, "The Basicranium," by C. L. Naylor, D.O.,[5] give a good idea of how this notochordal formation takes place in the human embryo. The mesoderm, or the middle, or mesodermal, layer of the human "embryonal area," is formed by lateral proliferation of the cells of the notochordal plate along the entire length of the notochord. The so-called "neurenteric canal" is, in the human, not a neurenteric but neuronotochordal canal. Earlier in this paper I have stated that the human mesoderm develops in the colloid which is generated by the middle one of the three concentric membranes (not the inner one) of the triconcentric membranous embryo (See Figures 1 and 2, p. 329, "The Cranial Vertebrae"[4]) *from cells which are derived from the primitive neural tissues,* i.e., the bottom of the neural groove, which cells, forming the early hollow, rod-like notochord which opens into the amniotic cavity through the mouth of the (so-called neurenteric) neuronotochordal canal (which mouth, or slit, has been known as the

"primitive streak") in the bottom of the medullary groove, continue to be dominated by the amniotic colloid as it flows into and fills this early hollow notochord. The function of the mesodermal center in the posterior one-third of the posterior lobe of the hypophysis is the adult representative of this early function of the hollow notochord. This adult center is formed of surrounding neural tissue within which are to be found hollow tubules of notochordal origin. Within these tubules is found a colloid substance, and, *just as in the stomodeal tubules of the anterior lobe, so here in the notochordal tubules of the posterior one-third of the posterior lobe, white cells are to found.* That these white cells deposit their granules within the colloid formed by the cells of the tubules, *(a true intercellular substance and therefore no more to be considered an internal secretion than is any intercellular mesodermal substance),* and retained within their lumina, and thus is integrated a total exclusive sample of the biochemical materials which are being purveyed to the mesodermal system, not for its maintenance, nor for its function, which two are parts of the total function of the anterior lobe, but for the control of a related interbalance between the progressed stages of tissue evolvement into which the different tissues of the mesodermal system have become differentiated. That the definite proportions each to the others with which the different tissues of this system are maintained within the human organism determine not alone the normalcy of the entire mesodermal system, but, that, for instance, there is a definite relationship between the relative thickness of the bones of the enhousing central osseous axis and the normalcy of the enhoused central nervous system are facts which make it seem not unreasonable to deduce that alteration of this normal balance of proportional relationship of the different mesodermal tissues to each other are etiologic of grave disturbances in the nervous and mental systems.

The second set of facts which I need here to review are the following in relation to the progressive changes in mesodermal tissue when bone formation, that is true ossification, is about to ensue. Always the careful differentiation between calcification and ossification must be made. The process of calcification results in the deposit of calcium carbonate. Calcium carbonate is an invertebrate product. Therefore pathologic calcification in the human tissues is to be seen as a regressive, a degenerative, change. Ossification is the process of the deposit of calcium phosphate Calcium phosphate is a vertebrate fabrication. Vertebrate bone is a pre-essential to the development of the differentiated central nervous system. The deposit of calcium phosphate in tissues is to be seen, therefore, as a progressive differentiation of mesodermal function, and when pathologically enhanced, is to be interpreted as a too-previous or a too-vigorous differentiation, a too-unchecked dominance of the mesodermal system by the tissue which controls its progressive differentiation, a failure of a definite type of the posterior one-third of the posterior lobe of the hypophysis.

Tissues, formed of cells derived of a parent tissue but engaged in the genesis of a new tissue within a certain colloid which is formed by a tissue differing embryologically from the parent tissue, when dominated in this new-tissue-forming process by the continued presence of the colloid of the parent tissue as well as by their own inherent tendencies, will show a tendency to revert to the type of the parent tissue if the governing center which normally inhibits the dominance of the parent tissue and its colloid, and thus holds it within the gamut of normal supremacy, is in a state of hypofunction. That this is exactly what happens in certain of the mesodermal tissues is apparent when it is considered that the histological changes which precede normal preosseous cartilage formation and the early histological changes manifest by the mesodermal tissues in some of the so-called muscular or connective tissue dystrophies are identical. Particularly is this true of the so-called pseudohypertrophic muscular dystrophic disorders.

In myositis ossificans progressiva the condition begins with the histologic changes which are physiologic for ossification of a preosseous cartilaginous or membranous base. These pathologies are, therefore, to be seen as dissynchronic changes of the progressed order. In the connective tissue dystrophies which show no pseudohypertrophy but which begin with an initial atrophy are found the attempt at complete reversion to the parent type of the dominant cell. Hollow fiber and fibrillae formation of a distinct nervous-tissue type are the end result of the tissue changes which take place in these types of the mesodermal dystrophies. Hollow fiber and fibrillae formation of a distinct type are the pre-eminent developmental traits of neural tissue. In this type of mesodermal dystrophy the connective tissue elements become so altered as to be seen as a pseudo-attempt at neural differentiation of mesoderm. This would constitute a complete reversion to the parent tissue from which were derived the cells which form the embryonal mesoderm. Histologically the fibers which eventuate from this particular type of mesodermal dystrophy resemble a very sorry and inept, but, nevertheless, a true, nervous tissue development.

That an obstinate osseous dominant which manifests itself as a failure in development of the centrum of the first cranial vertebra is the cause of the inherited mesodermal dystrophies is a conclusion which the facts as herein presented appear to me to warrant. This centrum achieves most of its development during the postnatal period, ossifies normally late in puberty, is, in my opinion, normally an important factor in the postnatal establishment of a normal posterior hypophysis. Its immature cessation of growth, its too early ossification, either of these would result in a hypodevelopment of the posterior one-third of the posterior lobe of the hypophysis. This developmental failure could conceivably be altered by such attention to the base as would favorably influence the postnatal development of these parts. If this were followed through several generations it is conceivable that the tendency could be overcome.

In sporadic, and in idiopathic cases, lesioning of the base would be the cause first to be considered. Only after unquestionable elimination of this possible etiology in any given case would further investigation as to its cause be in order.

Just as hypofunction of the posterior one-third of the posterior lobe can be caused as just described, so hyperfunction can be caused by hyperdevelopment. Hyperdevelopment would bring about a totally different set of symptoms. I am not, as yet, ready to report upon these symptom syndromes. I am under the impression, however, that hyperfunction of this center results in cortical cell deterioration of a definite type, among other things.

Plate 5.—Photograph showing Dr. Weaver's hands. The technique of correction of basilar lesions is essentially gentle, exact; a technique of extreme precision. Illustration shows first position for correction of torsion in articulation between centrum of second cranial and centrum of third cranial vertebrae. The head of the patient is balanced on the third finger of Dr. Weaver's right hand. This particular relation of the fingers to the torsion is not possible until after complete normalization of the spinal region from the seventh thoracic up to and including the craniospinal (occipitoatlantoid) articulations has been accomplished. When this cannot be accomplished, because of dense osseous adhesions, a special technique is worked out for each case. Illustration shows only first position in correction of one type of lesioning of one basilar articulation.

This photo is shown to illustrate the extreme delicacy and precision of Dr. Weaver's highly specialized osteopathic operative procedure for the lesioned basicranium. Photo taken by Hitchcock and Bork.

In cases of hypofunction of the posterior one-third of the posterior lobe of the hypophysis, feeding of the dessicated posterior one-third along with the correction of basilar lesions should aid in recovery. Such feeding should also be indicated in those cases of hypofunction in which closure of the base has taken place either wholly or in part; since in such cases correction is impossible short of the use of bone-resective surgery which at present seems impracticable. Sharp differentiation of hypo- and hyper-function needs to be made, as feeding in the latter condition would aggravate the already existing symptom syndrome. I have begun a series of x-ray studies and case records in which initial hypertrophy with subsequent atrophy of the posterior one-third seems certain. These cases do not show initial pseudomuscular hypertrophy, and they show neither malformation of, nor malposition of, the centrum of the first cranial vertebra, but they do show an enlargement of a definite type of the contours of the sella turcica in the areas over the posterior one-third of the posterior lobe of the hypophysis, indicating enlargement of the posterior one-third at some stage of the process, probably the initial stage, with attendant hyperfunction which becomes followed by hypofunction as the diseased condition of the most anterior tip of the notochord progresses, bringing about eventual functional failure.

Out of the field of the mesodermal dystrophies then, the sporadic and idiopathic cases are perhaps more frequently of basilar than of any other origin. Infection and invasion of the cells of the posterior one-third are the other two conditions which need to be differentiated. Cases suffering the inherited condition should respond to early and constant attention to the base which should be directed to normalization of the regressed postnatal growth and developmental processes of the regions involved by way of the arterial supply.

PSYCHOPATHOLOGY

In the field of psychopathology I have on record materials which indicate specific symptom syndromes in connection with hypertrophy of the epiphysis; other, as specific, syndromes with epiphyseal atrophy and lack of normal epiphyseal development. These materials are to be used in articles which I purpose to write which will deal specifically with the epiphysis and the next transmutation within the human organism.

NEUROLOGY

In the field of neurology there is the condition called disseminated, or multiple, sclerosis the cause of which has thus far remained a mystery, in spite of the many conjectures which prevail. The fact that it has remained so is due, I am convinced, to the fact that medical thought has philosophized as speciously in regard to the human epiphysis as it has in regard to bone formation. Seeing the human epiphysis as an actively functioning organ of the highest possible importance to the further evolvement of the organism, and interpreting the minute and exhaustive histological researches to which it has been subjected for at least a century and a half in the light of this regard, I have come upon some remarkable findings, some of which throw an interpretative light upon multiple sclerosis. The case records and x-ray studies which I have compiled on this disease tend to bear out my interpretations in this regard. *The arterial supply of the epiphysis is alterable by means of alterations of the normal alignments of those of the morphological parts of the three cranial vertebrae which form the plastic basicranium. Dr. Andrew T. Still taught, "The rule of the artery is supreme." The epiphysis is little more than an embryonal structure at birth. Its real development occurs between the time of birth and the age of seven. This development continues throughout life. Its size ratio to the total of all other cerebral tissues increases throughout life, whereas that of the hypophysis increases to the years which mark the threshold of maturity and then steadily declines from there. Birth lesioning (See "Obstetrical Lesioning of the Base" by the author[9]) of the plastic base would conceivably have a more far-reaching and detrimental effect upon the epiphysis than upon any other intracranial structure. It is conceivable that such birth lesioning affecting the development of the human epiphysis detrimentally is causative of those social and moral and psychic defects which are to be found sporadically in all social strata, in all human stock, associated with otherwise high grade neural and physical manifestations.*

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WINNERS IN ESSAY CONTEST

In the undergraduate essay contest conducted in the approved osteopathic colleges during the past school year, a total of thirty-two manuscripts were submitted on the assigned subject, "Essential Hypertension." A faculty committee of three in each college administered the contest in their respective schools and selected the following winners to each of whom has been sent a check for $25.00:

David Friedman—Chicago College of Osteopathy.

F. M. Neff—College of Osteopathic Physicians and Surgeons, Los Angeles.

William L. Daniels—Des Moines Still College of Osteopathy.

L. R. Hall, first prize of $15.00, and Robert C. Fulford, second prize of $10.00—Kansas City College of Osteopathy and Surgery.

Louis L. Rubel—Kirksville College of Osteopathy and Surgery.

Frederick Arble — Philadelphia College of Osteopathy.

These manuscripts are being reviewed by a national committee of three judges, who will evaluate them and select the winner of the grand prize, an additional award of $25.00. This award will be presented on the general program of the A.O.A. convention in Cincinnati in July.

This contest has been made possible through the generosity of a member of the profession who does not wish his name disclosed. A similar contest was conducted last year under the same auspices and administered by Dr. R. C. McCaughan, Executive Secretary. Plans are under way for carrying on the contest next year, the subject of which has not yet been decided upon.

The graduate essay contest, open to all graduate osteopathic physicians, was also conducted, but the response was not as good as it should have been. All manuscripts entered in this contest are now in the hands of a committee of judges and announcement of their selection of the winner will also be made at the Cincinnati convention. The subject for this contest was "Angina Pectoris with Special Reference to Its Mechanical Causes."

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INFANTILE PARALYSIS

When the heat of summer is at its height, the specter of infantile paralysis again may be expected to stalk among the children of the nation leaving in its wake twisted and withered limbs, saddened homes, and an increased public responsibility.

As reports of new cases begin to come in to public health bureaus, the usual warnings will be sent out. The public press will contain a list of "do's and don't's" signed by leading orthopedic surgeons and somewhere in the list will be words of caution to the effect that voluntary or involuntary movements of the body in the acute stage of poliomyelitis are harmful. "Complete rest in bed" and "immediate support of paralyzed muscles" will be the advice of the "learned." Evidence that so-called authorities continue to advocate this type of treatment during the acute stage is found in a recent article by Dr. Frank R. Ober,[1] member of the Council on Physical Therapy of the A.M.A. He says:

> Treatment during the febrile portion of the acute stage is mainly that of medical and nursing care, but as soon as the fever has subsided the attending physician should not consider that convalescence has begun, as is true in many other conditions, because by no possible chance can the lesion in the spinal cord be healed, since this is a matter of several weeks *(eight at least)*. It is during this time that the patient is very apt to be exquisitely tender in his legs, calves, thighs, hips, back and also in the adductor region of the shoulders. . . . Patients who are very sensitive in these parts may assume protective positions of flexion in order to relieve pain and thereby develop deformities. To prevent such conditions occurring, properly covered and padded wire splints must be applied to hold the extremities in the position of comfort. . . .
>
> No massage or exercises should be started during the stage of tenderness, since they do nothing but increase the pain and *delay favorable progress*. (Italics ours.)

There are many osteopathic physicians who have cared for infantile paralysis victims and who disagree with this so-called orthodox method of handling these cases. They believe that manipulative treatment should be given early—even in the acute stage—whether or not there is tenderness. Gentle manipulation of the muscles and other soft tissues and putting the joints of the extremities through as great a range of motion as possible absolutely without muscle strain relieves tenderness, increases the circulation of blood through these tissues, and aids in maintaining the flow of afferent and efferent nerve impulses. Of course, the physician is guided by the amount of discomfort his ministrations provoke and uses reasonable care and good judgment in determining the length and frequency of treatment. Downing[2] says that in the early stages the prone position of the patient is the one of choice "with the bed clothes artificially supported away from the spine. This avoids irritation and circulatory hypostatis, and the slightly flexed position of the spine and gravity favor better drainage." Some physicians use gentle rhythmical spinal traction to aid spinal cord drainage and circulation.[3] Active movements by the patient are forbidden during the first stage of the disease.

Osteopathic physicians are not the only persons who believe in early manipulative treatment of these cases. There is a woman in far-off Australia who refused to accept orthodox methods and developed her own treatment for the care of paralysis victims. Her success was spectacular. In North Queensland the state government became convinced of the excellence of her work and opened up a clinic under her direction. Later clinics were started in Brisbane, Sydney, and Melbourne. She recently made a trip to London to open a clinic there. Hundreds of patients have been placed under her care and hundreds have been restored to usefulness—many of them having been previously classified by orthopedic specialists as hopelessly crippled.

The name of this woman is Elizabeth Kenny. She is not a doctor. Over a year ago she published a textbook, "Infantile Paralysis and Cerebral Diplegia," explaining her methods. Organized medicine, as usual, undertook to discredit her work. Anyone outside the pale of the allopathic school of practice apparently has no business developing new methods of treatment, especially when they are successful and tend to throw a shadow on orthodox methods. The Australian correspondent of the *Journal of the A.M.A.* (March 19, 1938),[4] reports that "the best medical summary of her book was that 'there was much in her book that was both good and new. Unfortunately that which was good was not new, and that which was new was not good'." The correspondent goes on to say that the general attitude of the allopathic profession toward her has been wisely tolerant, which is exactly contrary to the report the Central office received from Dr. Milton Conn, osteopathic physician in Brisbane, who writes that "a running fire of opposition and adverse criticism has been kept up against her by the local British Medical Association and its high powers."

This antagonism accounts for the appointment of a royal commission (at Elizabeth Kenny's request)

1. Ober, Frank R.: Physical Therapy in Infantile Paralysis. Jour. Am. Med. Assn., 1938 (Jan. 1) 110:45-46.

2. Downing, C. H.: Osteopathic Principles in Disease. Ricardo J. Orozco, San Francisco, 1935, p. 106.

3. Watson, James M.: Treatment of Anterior Poliomyelitis. Jour. Amer. Osteo. Assn., 1937 (Feb.) 36:266-272.

4. Australian Correspondent: A New (?) System of Orthopedics. Jour. Am. Med. Assn., 1938 (Mar. 19) 110:910-911.

to inquire into her method. The report of the commission was published early this year. The striking feature of the report, according to the Australian correspondent, was that "the Elizabeth Kenny method of treatment of infantile paralysis now differs essentially from orthodox treatment in only two points: *the early movement of the limb during the stage of muscle tenderness, and the refusal to accept the principle of supporting every paresed muscle by suitable splinting.*" (Italics ours).

To our way of thinking these essential differences in treatment are the very procedures which account for the success obtained by Elizabeth Kenny and our own osteopathic physicians in infantile paralysis cases. Three months ago the Toronto newspapers carried the story of a nineteen-year-old boy who was crippled by an attack of poliomyelitis. We quote from the *Toronto Daily Star* of April 7 as follows:

"I was in Ottawa on the civic holiday of August last year and I came home feeling ill," Robinson, who is 19 years of age, told *The Star*. "My parents called our family physician, Dr. A., who gave me some capsules and ordered me to bed. He said he would come back again if I did not get to sleep and feel better.

"A half hour afterwards I collapsed in the bathroom and my parents called in Dr. A. once more. Dr. B. was also called in and a sample of my spinal fluid was taken, and at first it was thought my trouble was tubercular. However, as there was some doubt, my father telephoned to Dr. C., specialist, of Toronto, and my complaint was diagnosed as 'polio' at 7 a.m. on Tuesday morning.

"For three weeks I lay in bed at my home with two nurses in attendance. After this I felt somewhat better and was able to get from my bed and sit on the veranda for a little while each day. Then my left leg began to fail me and became almost completely paralyzed. By direction of Dr. C. my leg was put in a cast, but prior to actually using the cast Dr. D., osteopathic physician at Barrie, was called in by my parents and told of the order to put my leg in a cast.

"Dr. D. was very much opposed to this. In fact, he said that such treatment, in his opinion, was entirely wrong, and nothing short of a crime. If my leg was given proper treatment, he asserted, it would rapidly get better, but if I risked it in a cast I might be lame for the rest of my life."

"I called in the osteopathic physician," said Charles Robinson, father of Alvin, "because I knew of another 'polio' case, a lad, where a remarkable result had been achieved as a result of osteopathic treatment. We were impressed by what Dr. D. said, but in spite of it decided to give the medical specialists an opportunity, since they had commenced the treatment of the case."

"My leg was in a cast for three weeks," continued Alvin, "and it steadily shrank in size and my other leg began to develop symptoms of paralysis also. My father, who was becoming more and more alarmed, then went to Toronto and consulted three of the leading osteopathic physicians there.

"As a result of his conferences with these three distinguished practitioners, he returned to Barrie convinced that osteopathic methods might do something in my case, which was growing worse under the treatment prescribed by the medical men.

"By this time the doctors wanted to put my other leg in a cast as well, but instead my father notified them that he intended to take the advice of Dr. D., the Barrie osteopathic physician."

"The doctors strongly advised me against the course I proposed for my son, but I was determined," said Charles Robinson, Alvin's father. "On September 28, the osteopathic physician started to give my boy treatment and from the very start he showed improvement."

"When the osteopathic physician started his treatment on September 28, both my legs were virtually dead and I had absolutely no control of them," said Alvin. "By the first of December I was able to get up for an hour or so each day. Two weeks before Christmas I walked one way to my father's store, three blocks from my home. I had to have a little help. However, my improvement continued and now I am able, without stick or assistance, to work in the store, go up and down stairs and walk to my home and back quite readily.

"My daily osteopathic treatments are now reduced to two a week and I am getting better right along and hope that in the not-distant future I shall be able to play badminton again and perhaps even get into the prize lists as I did a year ago before the 'polio' laid me on my back."

Although newspaper stories are not usually considered satisfactory sources of scientific information, this case is so typical of many others in which osteopathic physicians have been employed fairly early in the disease that its authenticity can be accepted without question.

Five principles of treatment are given by Elizabeth Kenny in her textbook mentioned previously. Some of the principles are so strikingly similar to those upon which osteopathic practice has been based for years, not in the treatment of infantile paralysis only, but in the treatment of disease in general, that we quote them here:

(1) Maintenance of impulse. (According to the royal commission's interpretation, Miss Kenny means "the maintenance of the nervous impulse to the muscles from the brain centers.")

(2) Maintenance of circulation.

(3) Hydrotherapy and remedial work.

(4) Maintenance of a bright mental outlook.

(5) Avoidance of the generally accepted methods of immobilization.

According to the Australian correspondent in the *Journal of the A.M.A.*,[4] the commission could not be induced to concede that immobilization should be abandoned and he comments on this as follows:

Without the application of some apparatus to support weak against normal muscles, deformities due to stretching and contracture are expected. Under the Kenny method such deformities have been observed not as frequently as might have been thought. This is due, probably, to the frequency with which the daily joint movements are performed, which frequency of movement would be impracticable in orthopedic departments of most general hospitals. . . .

The Australian correspondent's conclusion is:

Miss Kenny has certainly had some measure of success, but it is considered that this is due to the intensity rather than to the nature of the treatment. She has been liberally supplied with funds and the commission considers that, given the same intensity of treatment, orthodox methods would produce better results.

Of course orthodox medicine can do better (than it has been doing) if shown the way. Time and again, as a reading of medical history will prove, methods once bitterly opposed by the "bigwigs" of the profession finally come to be accepted as orthodox procedures. The pioneers in medical progress have always been subjected to severe criticism, unjust ridicule, and even professional ostracism.

In this discussion, up to now, nothing has been said regarding the prophylactic treatment of poliomye-

litis. According to Archibald L. Hoyne,[5] writing in the "Yearbook of Pediatrics, 1937":

> Neither Kolmer's attenuated virus nor Brodie's vaccine has been given much approval for the purpose of establishing active immunity. This is one of the problems still to be solved. Use of the attenuated virus has been regarded by some as not without danger. The vaccine is said to lack the protective qualities originally claimed for it.

Last year a mild epidemic of infantile paralysis visited the country. For the first time stations were established where children could be brought to have their noses sprayed with a solution of zinc sulphate, which, according to the experiments of Armstrong and Harrison[6] on monkeys, held out some hope of prevention of the dread disease. The impracticability of reaching the cribriform plate and olfactory area (the known portals of entry of the poliomyelitis virus) by ordinary methods of spraying the nose with an atomizer while the patient is in the sitting position with head tilted back, soon became apparent. One investigator[7] conducted a series of experiments to determine the best and safest method by which the prophylactic solution could be made to cover completely the olfactory area. A full report of his method is given on page 561 of this issue of THE JOURNAL. Whether the area has to be completely covered to provide protection is a question still to be answered. Nevertheless it is felt that the best results are obtained if this is done.

Since prophylactic treatment of humans against infantile paralysis by means of zinc sulphate solution sprayed intranasally is still in the experimental stage, its efficacy remains to be determined, and this only after observance of many series of children, over a prescribed period, part of whom have received prophylactic treatment and part of whom have not been protected.

In the meantime, certain definite suggestions can be given to those persons who have learned to rely upon osteopathic physicians for health guidance of their children. These suggestions are based partly upon evidence obtained from the histories of infantile paralysis victims and partly upon knowledge of general hygienic rules of health.

Since the vast majority of patients who develop poliomyelitis are not known to have been exposed to any source of infection, Perrin T. Wilson, D.O.,[8] advances a theory as to the predisposing cause which is based on the individual failure of the physiological entity of the body. He believes that a physiological accident precludes an attack of poliomyelitis. By physiological accident he means "that thing which occurs when the body is unable to keep the physiological response to insults within normal limits, following which a pathological condition exists." He divides the physiological accident into three phases: (a) the muscles which are later paralyzed are overused to the point of fatigue; (b) heat and perspiration result; (c) the body is subjected to sudden chilling." Chilling results in a sudden redistribution of the blood from the surface to the interior of the body, followed by possible damage to the blood channels supplying the spinal cord. Oozing of an excessive amount of serous exudate outside the normal channels may result in stasis followed by disintegration and fermentation. Dr. Wilson does not deny that a pathological virus or germ may be present, but there is the possibility that the pathological agent is given a more favorable medium in which to grow. In fact, any factor of irritation, or disturbed circulation through the nerve centers of the cord (as found in osteopathic spinal joint lesions), is concerned in the lessening of the resistance of these nerve centers to infection and to the influence of toxins.

Therefore, a list of suggestions to interested lay persons who wish to exercise the greatest precautions against the development of poliomyelitis may very well begin with the warning:

(1) Avoid sudden chilling of the body, either by cold baths or cold drinks.

The other suggestions are general, being applicable to any well-arranged system of hygiene for keeping the resistance of the body at the highest possible point:

(2) Avoid crowds, especially gatherings of children.

(3) Sleep eight hours every night in well-ventilated and adequately screened quarters.

(4) Eat a well-balanced diet, making sure that it includes fruits, vegetables, milk, eggs, and whole-grain products, which contain essential minerals and vitamins. Vitamin B—the nerve-protective vitamin—is especially valuable as a prophylactic against infantile paralysis. It is found in wheat germ, yeast extract, egg yolk, and green vegetables.

(5) See a physician who can make the necessary examination for the detection of mechanical faults in the body structure, particularly the spinal column, and who can do the corrective work if any is found necessary.

(6) Avoid a display of fearfulness even in the face of an epidemic. Cheerfulness and optimism are good tonics for the human system. R.E.D.

[*Editorial Note.*—A copy of the above editorial was submitted to a member of the profession, who, we felt, had had considerable experience and who had done a large amount of reading on the subject. He was asked to comment and criticize it. After receiving his letter, we were made aware of some important diagnostic and treatment procedures not mentioned in our editorial. We would have liked to include this material in our editorial, but the editorial had been set in type and considerable expense would have been incurred if it had to be re-set. Since the comments and suggestions are very pertinent to the subject matter discussed and are very valuable to the profession, we publish them on page 560 of this issue of THE JOURNAL. Our only regret is that the editorial pages were made up before this letter arrived, otherwise we would have included this important material here.]

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6. Armstrong, Charles, and Harrison, W. T.: Public Health Reports for May 31, 1935, and August 14, 1936, reviewed in Jour. Am. Osteo. Assn., 1936 (Jan.) 35:263 and (Nov.) 36:161 respectively.

7. Pentecost, R. Sterling: Zinc Sulphate as a Chemoprophylactic Agent in Epidemic Poliomyelitis. Can. Pub. Health Rep., 1937 (Oct.) 28:493-497.

8. Wilson, Perrin T.: Observations on Infantile Paralysis. Jour. Am. Osteo. Assn., 1933 (June) 32:383-386.

U. S. EMPLOYEES' COMPENSATION ACT

President Roosevelt signed the Burke-Drew bill, which had passed both houses of Congress under the unanimous consent rules, as was reported briefly in the June number of THE JOURNAL.

According to *The Journal of the American Medical Association*, that organization had turned over all the stones it knew about to prevent the passage of the bill. If that is true (and it is natural to believe it) then that once proud aggregation of medical politicians has indeed fallen to a pitiable state. On the other hand, the enemy may merely have slipped because of a belief that "it can't happen here." God forbid that this advance step, or any other which we may take, shall ever lead us to any such state of overconfidence! Let us rather take to heart the fact that this culmination of a series of setbacks may goad organized allopathy to a frenzy of revenge, and to such an onslaught as may cost us dear.

Particularly, let us proceed with circumspection in connection with the present form of the United States Employees' Compensation Act. The Commission works under an Act which is essentially nothing more nor less than an ordinary workmen's compensation law, giving the employer the first right in the choice of a physician for his injured employee. The employer is the United States government, and it has a quite extensive Public Health Service, with a large personnel and many hospitals to whom and to which workers must go when possible. Next there is a panel of physicians (as is so often the case) who handle injured workers unable to get to the regularly employed physicians of Uncle Sam.

The new reading of the Employees' Compensation Act does not require the Compensation Commission to put osteopathic physicians on the panel. It merely removes any possible doubt there ever may have been in any one's mind that the Commission has the authority to make such appointments. In that part of the law defining the various terms it uses, the reading was: "The term, 'physician,' includes surgeons." That is now extended by the addition of these words: " . . . and osteopathic practitioners, within the scope of their practice as defined by state law.

"The term, 'medical, surgical, and hospital services and supplies,' includes services and supplies by osteopathic practitioners and hospitals, within the scope of their practice as defined by state law."

There are other cases where department and bureau officials have presumed to bar osteopathic service because the law did not specifically include it. It should now be easier to prevent or to secure the change of such regulations, whether national or state. It should now be easier to secure justice at the hands of those in positions of responsibility in other than governmental organizations.

The President and Congress have had opportunity to pass on osteopathy just twice. Once was when the Medical Practice Act of the District of Columbia became law, providing: "The degrees, doctor of medicine, and doctor of osteopathy, shall be accorded the same rights and privileges under governmental regulations." The second time is now, when not a vote could be mustered in Congress against the proposition that, "The term, 'physician,' includes . . . osteopathic practitioners . . ."

"PHILADELPHIA COLLEGE RESEARCH REPORT"

Dr. Frederick A. Long, director of the Department of Osteopathic Research at the Philadelphia College, has written "a vigorous protest" to the editorial under the above head in the June JOURNAL. He says: "It is perfectly plain to anyone who can read that the object of this article is to convey the impression that it is because the American Osteopathic Association has been supporting research work such as this. . . . You are well aware that the A.O.A. has nothing to do with financing our work. . . . I earnestly suggest that you publish the true state of affairs [which is] that this work was financed entirely by the Philadelphia College, [which] also financed the publication and free distribution of the results."

The editorial objected to did not say nor infer that there was financial support of the research in question by the Association. No such financial support was rendered. The work of Drs. Lloyd and Long was commended as an excellent example of research by individuals and institutions, and it was stated that the book is for distribution without charge on application to Dr. Long.

ANOTHER LEADER GONE

Osteopathy lost one of its outstanding leaders on May 30. He was Dr. Carle Harvey Phinney, President of the College of Osteopathic Physicians and Surgeons, Los Angeles.

Born in Morrison, Ill., in 1877, Dr. Phinney obtained his early education at Exeter High School, Exeter, Nebr.; in Omaha; and at Grand Island College, Grand Island, Nebr. His preosteopathic education was obtained at Colorado College, Colorado Springs, Colo. He was graduated from the Pacific College of Osteopathy in 1901, and from then until the time of his death was associated almost continuously in various teaching and executive capacities with this college and its successor, the present College of Osteopathic Physicians and Surgeons. In June, 1936, he became President.

Beside his connections with the college, Dr. Phinney was a member of the medical board of the Los Angeles County Osteopathic Hospital, 1930-35.

One of the last scientific papers which he wrote and presented before the Osteopathic Surgical Society of Los Angeles is published in this issue of THE JOURNAL.

The College of Osteopathic Physicians and Surgeons will miss his guiding hand and the profession his keen and inquiring mind in the evaluation of things scientific.

ANOTHER OPPORTUNITY MISSED

Hippocrates is quoted as saying: "One or more vertebrae of the spine may, or may not, go out of place very much," or "they might give way very little, and, if they do, they are likely to produce serious complications and even death, if not properly adjusted." "It is not that one [vertebra] has sprung out to a distance from the rest; but each gives way a little and the displacement, taken all together, seems great. That is why the spinal marrow does not suffer from such distortion."

The writer who gives these quotations from Hippocrates goes on to say of the Father of Medicine:

> He evidently studied very closely the mechanism of the spinal column and understood thoroughly its importance and significance. He appears to have known well its relation and application to and effects upon the nervous system, and also its effects upon the whole organism. He describes its mechanical maleffect upon the soft tissues adjacent to the spine, as making them tense and taut and somewhat elevated to the touch. He insisted that the practitioner should become well acquainted with all these facts, and learn the mechanical relation of the spinal column to the nervous system and of the latter to the organism, so as to be ever ready to make proper correction in case of such skeletal and spinal displacements and malformations or similar derangements, . . .

All of this, from a book recently published, is a reminder of a series of articles under the general head, "The Trend Toward Osteopathy," prepared by the present Editor of THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION. It began in THE JOURNAL for July, 1927, and appeared at intervals, the twentieth being in the June, 1931, issue, after which time the press of other duties required its discontinuance.

Similar studies into osteopathic implications in the allopathic literature of various times were made long ago by the late Dr. Charles C. Teall, later by Dr. W. J. Deason, much more recently by Dr. Richard N. MacBain, and from time to time by many others.

In the first article on "The Trend Toward Osteopathy," it was said: "Body Mechanics, even spinal manipulation, is not new. . . . Primitive people for ages have used crude methods of mechanical treatment." An attempt was made, however, to indicate that Dr. A. T. Still was the first to make a comprehensive and all-inclusive application of such knowledge and such methods to the diagnosis and treatment of disease in general.

Again it was said, in THE JOURNAL for January, 1928:

> Manual methods of treating the human body seem to have been known in all lands and in nearly all times. . . . Early records of ancient civilization tell of their widespread use thousands of years ago. . . . It is said that Herodicus, in the fifth century, B.C., first laid down the principles of rational, mechanical methods of treatment. . . . Herodotus, 484 B.C., was among the first of the Greeks to refer [to them] . . . Other advocates of such methods were Plato, Socrates, and Hippocrates.

It is known that not all of the writings ascribed to Hippocrates were actually his. Further it is known that not all of his works have been considered of sufficient interest to be translated, or, at least, they have not been generally published in English. Some that were translated may have come out more in the form of paraphrases than of translations, and translators may have picked the things which seemed most interesting and may have colored what they did translate in accordance with their beliefs.

For these reasons the Editor long cherished the hope that some day he could go into such translations of Hippocratic writings as were extant, and even dared to hope that he might avail himself of the suggestion of a Greek scholar that together they might go into such original sources as were available.

But neither the American Osteopathic Association nor the colleges or other institutions, have been financially able to undertake the study as it should be done. Furthermore, the depression came. The economic revolution advanced apace. The demands for the services of organized osteopathy grew, and the funds available, in the form of dues and other payments from osteopathic physicians, did not grow in proportion. The compiler of "The Trend Toward Osteopathy" became Editor for the Association, with increasing tasks to be done. That brain child was put aside and neglected from year to year—though never forgotten.

And now comes this imposing-looking book, sold by G. P. Putnam's Sons at $10. It is called: "How Ancient Healing Governs Modern Therapeutics: The Contribution of Hellenic Science to Modern Medicine and Scientific Progress," by Kleanthes A. Ligeros, M.D., Ph.D., Athens, Greece. The frontispiece shows a picture described thus: "Votive tablet (fifth century B.C.) from the Aesculapium of Piraeus showing manipulative adjustment of the upper dorsal spine. (Museum of Piraeus.)" The picture is accompanied by a passage in Greek whose translation presumably is given in the opening paragraph of this editorial.

On the jacket of the book we are told that its writer was formerly Director and President of the Therapeutic Institute of Athens, Greece. Such inquiries as the Editor of THE JOURNAL has been able to make in Athens have not as yet shown what this may mean. The book's jacket tells further how ten years of study and research have imbued him with a reverence for the achievements of his forebears; that he is an American, educated in Greek, Canadian and American schools and universities and well versed in many languages. Some account of his American university training is given, which the Editor of THE JOURNAL has not succeeded in verifying. We are told further that in 1930 the Minister of Education in Greece wanted to establish a special chair for him in the University of Athens, but that instability and changes in government prevented the realization of the plan. What the proposed chair was to be, we are left to guess.

There are more or less vague references to his well-known works in Greek and other languages, and to his many years of research in the ancient archives of classical medicine in Greece, Egypt, and elsewhere,

and in the libraries and museums of London, Paris, Rome, Leipzig, and Athens.

Altogether, it is a most imposing volume, and it would seem to be very convincing to anyone, at least, who does not look beneath the surface. The reader is struck by the fact that in more than a dozen places in the book there are, rather incidentally introduced, favorable references to chiropractic. In fact, there are nearly a dozen references by name to D. D. Palmer, and an appendix consists of a paper said to have been given by the author before the Medical Society of Athens, quoting D. D. Palmer, Joel E. Goldthwait, Henry P. De Forest and many others.

The average reader will probably be impressed by what he will take for the very evident sincerity of an M.D. writer of such a book, when he says in a footnote:

> In writing the above lines, the writer wishes to state that he was not aware of the fact that D. D. Palmer, in his volume, "The Science and Art of Chiropractic," made the admission that he was not the first to adjust a subluxated vertebra, and also that chiropractic was not his own discovery, being, as he stated, anciently practiced in Greece and elsewhere. The author, like many others, was of the opinion that chiropractic was the original discovery of D. D. Palmer and that he was the first to expound the subluxation idea. Anyone, therefore, can imagine the author's great surprise when he came across D. D. Palmer's book where, for the first time, he read the following: "I have both in print and by word of mouth repeatedly stated, and now emphatically repeat the statement, that I am not the first person to replace subluxated vetebrae, for this art has been practiced for thousands of years."

Now who is this K. A. Ligeros, M.D., who so gladly hails D. D. Palmer as an authority? The A.M.A. Directory through the years fails to tell us. But there are chiropractic booklets which he signs, "K. Ligeros, D.C.," and *The Chiropractic Journal* says he graduated at the Palmer School of Chiropractic.

That *Journal* also states:

> The first hint about chiropractic being traced to the ancient Greek healers was made in 1930 by Dr. Ligeros in his speech before the assembly of the Cincinnati convention.

(Well, at least it seems evident that D. D. Palmer's book is not on the required reading list at the school he founded.)

That same *Journal,* for a year and a half or longer, has been telling more or less jubilantly of the progress of Ligeros' book. For a time it was planned that it would be produced by the National Chiropractic Association.

But arrangements were made to have it appear with the imprint of a well-known publishing house, and now it is reported that arrangements have been made with a Swiss house for its translation and printing in French and in German.

The book is well written and attractively produced. There is little evidence within it, to show that it is the work of a chiropractor. Neither is there evidence to show whether this writer has reported the words of Hippocrates more accurately than some other chiropractors have quoted various authors. It is being used, and increasingly will be used, to advance chiropractic. One reason is that chiropractors pay, and pay far more than we do, to get their work done. There are able writers in the osteopathic profession—able students, able research workers. We must support them better, morally and financially, than we have done.

Meanwhile, read what *The Chiropractic Journal* for January, 1938, says of the Ligeros book:

> This book will do more to promote Chiropractic than all our other public relation activities combined. It is a "million dollar book." The scientific publicity accruing from the publication of this volume, together with its entry and acceptance in scientific and educational circles, has advanced this profession further in a few months than it had progressed in all years of its modern existence. If we fail now to give our support to the book, the whole world will throw the stone of anathema at us and, perhaps, chiropractic will fall into the hands of medicine. Is this book greater than our vision? Will our opponents, older and more experienced than we, discover ways of utilizing it, thus depriving us of the opportunity of using it to perpetuate and elevate chiropractic to dominance in the healing arts? The publishers are convinced that this book will continue to sell for years and another large publishing house, tremendously impressed, has approached Dr. Ligeros for preference in publishing his next book. Previously, this company offered to publish the present volume if Dr. Ligeros would emasculate it of chiropractic. Having seen this book published by Putnam's, with chiropractic included, they are now willing, even eager, to bring out a volume with chiropractic text included. Thus we have our profession accepted in the scientific publishing world, which is one of the greatest accomplishments in modern chiropractic.

GREETINGS TO EDITOR ESTERLINE

The Journal of Osteopathy, the oldest of osteopathic periodicals, will be edited during the summer months of 1938 by Crawford M. Esterline, D.O., professor of physiology and laboratory technician for the public clinic at the Kirksville College of Osteopathy and Surgery. Dr. Esterline graduated from Kirksville in 1933. He was at one time a special student in laboratory technique at Gradwohl Institute, St. Louis. Following his graduation, he practiced for two years at Springfield, Mo., since which time he has been with the Kirksville College.

William C. Cozad, who has been editor of *The Journal* since Dr. Litton went to the College of Osteopathic Physicians and Surgeons, graduated with the June, 1938, class, and contemplates entering practice after serving an internship.

The Journal and Dr. Esterline have our very best wishes.

WHAT WILL THE MESSAGE BE?

"The moving finger writes . . . " What will it write for you in July, 1938? It will write attendance at a wonderful convention in Cincinnati or it will write another kind of message which nothing can erase. This is the last call.

MEMBERSHIP FIGURES

There are many ways of looking at membership figures. They are considered from different angles, depending upon time of year and other considerations. There are two dates when they are of especial interest. One is the first of June when the fiscal year begins. Another is the first of December, when delinquents are dropped.

On June 1, 1938, the Association had 5,446 members besides 293 recent graduates who were not yet licensed and therefore could not complete their membership. There were 3,958 nonmembers, not including 113 recent graduates not yet reported as licensed and eligible.

The total recent graduate membership of 293 compares with 198 on June 1 a year ago.

The total membership with the new graduates counted out, 5,446, compares with 5,112 a year ago. That's a gain of better than 6½ per cent.

It is to be remembered that this was the first day of the fiscal year, and a heavy percentage had not yet paid their dues. But there were 1,637 fully paid up, as against 1,518 a year ago—a gain of nearly 8 per cent. In other words, just over 30 per cent were fully paid in advance this year, and just under 30 per cent a year ago.

This year, 234 had made partial payments by June 1, whereas a year ago there were 155. In other words there were more than 34 per cent wholly or partly paid this year, against less than 33 per cent a year ago.

There are published herewith the last installments of the advance membership honor rolls of individuals and towns. There are almost as many towns added for the last half of May as for the whole month of April, and something like 80 per cent as many doctors for this half month as for the entire previous month.

A number of typical expressions from those paying dues, follow:

Why haven't you made this increase before? It is surely worth much more to all of us.—C. B. Hoff, Bronxville, N. Y.

I believe almost every osteopathic physician will gladly pay the new membership dues. I believe we appreciate things more when we pay what they are worth.—Chester C. Chapin, Little Rock, Ark.

Dues ought to be $50 a year and then maybe we would get somewhere.—Robert E. Truhlar, Cleveland, Ohio.

I think this is the best thing the Association has ever done and the results will be the greatest for the osteopathic profession of anything that has ever been done.—F. B. Shain, Chicago.

I do not know where I get better value for my money than in the organization of my own profession. To maintain our integrity as a profession we must present a united front and to do this we must have an efficient organization.—Thomas B. Powell, Larned, Kansas.

HONOR ROLL OF CITIES

Alabama—Mobile
Arizona—Case Grande, Mesa
California — Mecca, Oroville, Paso Robles
Colorado—Delta, Hugo
Connecticut—Fairfield, Wallingford
Idaho—Wallace
Illinois — Augusta, Bement, Crystal Lake, Morrison, Princeton, Virginia.
Iowa — Columbus Junction, Greenfield, Grinnell, Guthrie Center, Menlo
Kansas—Burns, Caldwell, Great Bend, Howard, Lucas, Smith Center, Utica, Waconda Springs
Kentucky—Hopkinsville
Maine—Camden, Harrison, Jefferson, Pittsfield
Massachusetts — Belmont, Leominster, West Medford, Woods Hole
Michigan—Shepherd
Minnesota—Brainerd, Marshall, Mudbaden Waseca, Wilmar
Missouri—Buffalo, Farmington, Mountain View. Sullivan, Tuscumbia
Nebraska—Madison, Palisade, Wisner
New Jersey — Bernardsville, Woodlynne
New York—Amsterdam, Astoria, Glen Cove, Newburgh
North Carolina—Elizabeth City, Mooresville, Southern Pines, Winston-Salem
Ohio—New Lexington
Oklahoma—Beggs, Weleetka
Pennsylvania—Bedford, Morrisville, Stroudsburg
Texas—Cleburne, Weatherford
Vermont—St. Johnsbury
Virginia—Charlottesville, Harrisonburg, Staunton
Washington—Clarkson, Forks
West Virginia—Chester
Wyoming—Jackson
Canada—Moncton, N.B.
Argentine Republic — Buenos Aires
Australia—Brisbane
Costa Rica—San Jose
Holland—Zuid

ADVANCED MEMBERSHIP HONOR ROLL

(Only those names of members are listed whose dues were received after the June JOURNAL was set up and before June 1, 1938.)

Ackerly, H. Davis, Glen Cove, L.I., N.Y.
Aillaud, A., Charlottesville, Va.
Ambler, Samuel J., Elyria, Ohio
Amsden, C. Ethelwolfe, Toronto, Ont., Can.
Anderson, Carroll S., Parsons, Kans.
Anderson, Victoria, St. Paul, Minn.
Arthur, Eleanore M., Atlantic City, N. J.
Arthur, J. M. M., New York, N. Y.
Bachman, M. E., Des Moines, Iowa
Bachman, Robert, Des Moines, Iowa
Bachman, Robert E., Philadelphia, Pa.
Baer, Fred J., Stroudsburg, Pa.
Bailey, Walter E., St. Louis, Mo.
Baker, C. L., Memphis, Tenn.
Baker, Frank, Clarkston, Wash.
Baker, R. P., Lancaster, Pa.
Baker, W. L., Memphis, Tenn.
Balmer, Charles F., Urbana, Ohio
Barnicle, E. A., University City, Mo.
Bashor, Horace A., Los Angeles, Calif.
Beard, Martha D., Hopkinsville, Ky.
Bechly, F. W., Guthrie Center, Iowa
Bell, Haney H., Petersburg, Va.
Bell, John H., Elizabeth City, N. C.
Bell, L. M., Marietta, Ohio
Benedict, E. P., Columbus, Ohio
Berlijn, Gerard J., Zuid, Holland
Berston, H. R., St. Paul, Minn.
Beyer, H. E., Weleetka, Okla.
Bingesser, Carlos F., Waconda Springs, Kans.
Blackman, Charles J., Bluffton, Ind.
Bliss, Asa Potter, Los Angeles, Calif.
Bliss, Pearl A., Los Angeles, Calif.
Boggan, Peter A., Dayton, Ohio
Boulware, M. T., McCook, Nebr.
Bowlby, Lewis M., El Paso, Texas
Boyer, Arthur B., Kansas City, Mo.
Brearley, Peter H., Philadelphia, Pa.
Brookman, John L., Albany, N. Y.
Brooks, Emily C., Muskogee, Okla.
Brown, Alice M., Horton, Kans.
Brown, Charles M., Altoona, Pa.
Brown, Nora R., Waterville, Maine
Brown, William C., Waterville, Maine
Brownell, Galen C., Kansas City, Mo.
Bryant, Ward C., Greenfield, Mass.
Bryson, Jacqueline, Los Angeles, Calif.
Buchele, Robert, Howard, Kans.
Burgess, Rozelle L., San Rafael, Calif.
Burns, Guy W., New York, N. Y.
Burrowes, A. E., London, England
Bush, Ernest W., Southern Pines, N.C.
Buxton, William B., Utica, N. Y.
Callison, Maud P., Salt Lake City, Utah
Campbell, Ida S., New London, Conn.
Canfield, Tom V., Cincinnati, Ohio
Cash, Byron, Des Moines, Iowa
Caverly, Fred C., Passaic, N. J.
Chase, Charles A., Hillsboro, Ill.
Childs, William S., Salina, Kans.
Cliff, A. B., Pasadena, Calif.
Clybourne, Harold E., Columbus, Ohio
Cohen, Theodore, Morrisville, Pa.
Conn, Milton, Brisbane, Queensland, Australia
Conway, Nellie E., Los Angeles, Calif.
Cooke, Albert A., Leominster, Mass.
Costello, Joseph O., Hollywood, Calif.
Cottingham, W. W., Mountain View, Mo.
Crew, L. A., Gardiner, Mont.
Crismond, J. J., Morrison, Ill.
Cusick, William R., Wallace, Idaho
Daily, Dar D., Weatherford, Texas
Daniels, R. R., Denver, Colo.
Dash, Hugh M., Brooklyn, N. Y.
Davis, Elmer L., Macomb, Ill.
Davis, Lloyd W., McAllen, Texas
Day, O. K., Harrison, Maine
Day, Rubie W., Harrison, Maine
Dennis, A. W., Des Moines, Iowa
Devine, J. P., Hugo, Okla.
Devine, L. V., Salina, Kans.
DeWalt, Ira, Wisner, Nebr.
Dickerman, Charles P., Staunton, Va.
Dornbush, Frank D., Steubenville, Ohio
Downing, Bradley C., Chicago, Ill.
Downing, Carter H., San Francisco, Calif.
Dunning, Helen M., New York, N. Y.
Elderkin, Emma C., Boston, Mass.
Ellinger, M. G., Milwaukee, Wis.
Elliott, G. G., Toronto, Ont., Can.
Elliott, Virgene K., Los Angeles, Calif.
Ellison, William H., St. Petersburg, Fla.
Englehart, F. A., Oklahoma City, Okla.

(Continued on page 550)

Special Article

D.O.—Doctors of Osteopathy or Dodging Opportunity

GEORGE W. WOODBURY, D.O.
Alhambra, Calif.

Of all the varied manifestations of a kind and generous Mother Nature, none is more attractive and alluring than a sturdy, symmetrical, distinctive, protective, and productive tree. The secret of its strength and beauty is hidden in the buried, but living, spread of its root clusters. But the rugged trunk, the outflung branches, the dancing leaves and beautiful blossoms, are a challenge and delight to all mankind who will dare and care to see.

Despite the sense appeal of strength and beauty in the forest monarch or the garden shade tree, a mission unfulfilled is chargeable to all of Nature's masterpieces, if at the appointed time and season, there appears no evidence to indicate the possibility of reproduction—through ripened seed, fruit, berry, nut, or other manifestation.

The same feeling of disappointment and frustration which accompanies the discovery of unfruitfulness in the plant world, assails the friend and follower of a large, but barren, inutile, human organization—which carries all the signs of outward growth and inward vigor, yet lacks productiveness in accomplishment or achievement. For, after all, aside from incidental differences of form, and static limitations, the civil, social, and professional groupings as we now know them, bear many likenesses to a plant or tree.

The osteopathic profession is undeniably rooted and grounded in unassailable fundamental principles. It has a sturdy central trunk—in the national association; and scores of rugged branches in state and county organizations. In and within the cities, towns, and villages, are many twig-like smaller branches holding together the individual leaves and blossoms.

From all appearances, there should be abundant fruitage of good deeds, and repeated harvests of popular appeal, to justify the growth and development of this splendid professional body. As a matter of fact, there have been periods of great accomplishment; and there is still great promise of future achievment—dependent to a large extent on the maturation of certain current "objectives" such as stimulation, elevation, promotion, dissemination, and guidance, of and along specific lines of professional betterment—all of which should result in the merited and much hoped for attainment of public appreciation—and favor.

However, there is a dangerous threat to the accomplishment of its aims and purposes, and to the quality of results which may be achieved ultimately, because of the apparent inability of the profession to attain the most important of the listed "objectives" which have been published* by the Central office as the goal of its efforts. *The co-operation of the profession as a whole* is at once the keynote to our ultimate success, and the fundamental need—and weakness—of our great body politic. It should head the list of our stated objectives, and be the capstone as well as the base of our pyramidal professional structure.

It is inconceivable, at least unbelievable, that even the mightiest monarch of the field or forest could complete its mission of perpetuation by reproduction, if any large proportion of its leaves and blossoms decided to withdraw from the parent branch or stem and take no part in the life cycle of its species. Yet that is the present status of our truly great and promising profession. In some of the city, county and state organizations, the loyal and actively productive supporting membership of the group is perceptibly outnumbered by a host of noninterested, nonaligned, noncontributing, nonproductive, nonmembers—plus the always present fair percentage of nonco-operative, recalcitrant and altogether contumacious "in-name-only" members; who are not only nonproducers, but by their very attitudes are dangerous nonrepresentatives and damaging nonsupporters of the group—and cause. While there are more osteopathic physicians in than out of the national organization, the proportion of the latter is far too high.

Herein may lie our impotency and discomfiture, when confronted by socialized medicine; industrial accident and insurance representation; and a score of other politico-professional problems, which can only be met and solved by the visible weight of collective and elective functioning. To say that we lack the overwhelming force of numbers, is beside the point—so long as we fail to utilize the potential energy in our possession; which, though latent, will be unavailing without the attainment of unity—not alone in numbers but in action, spirit, design, and willing purpose.

One of the central features of the listed A.O.A. "objectives" is "The Guidance of Public Opinion and Favor." The quickest and surest route to a "favorable" opinion is by way of constant exhibition and repetition of worth-while proof of functional existence. It is along this line that we have muffed too many chances for the making of a good "collective" impression of our ability to function. There can be no successful "Promotion of Professional Interests"—by which we hope to secure a favorable share of public approval—so long as any considerable proportion of the profession are, either openly or tacitly, rejecting the privilege, and hiding away from the opportunity, to represent and publicize their connection with the parent body.

Over the radio especially, and through many minor channels of "vocalized publicity", our strongest mass competitor utilizes every opportunity to stress the fact that its representative speaker on the current—as well as on all other of its sponsored programs—is John R. So-and-So, M.D., *Doctor of Medicine*. This phrase is worked into every speech and announcement, anywhere from three to a dozen times during the short time allotted to the daily or weekly radio program; and whereas, John R. So-and-So, may in deed and in fact be just an out and out So-and-So to the cognoscenti; nevertheless, there goes through the ether to millions of

*Objectives of the A.O.A. are published regularly in a panel on the cover of THE FORUM.

human ears and minds, the constantly repeated message and impression, that their individual and public health security is incontrovertibly wrapped up, and inseparably bounded by, and linked to, the holders of a particular professional degree—namely and solely that of M.D.—*Doctor of Medicine.*

As an interesting sidelight on the matter of using an identifying name suffix or title, it might be apropos to mention the fact that of the many thousand graduates of the old-line schools of medicine—even those who have fallen to the near-quack habit of using unethical or border line advertising—in no instance is there an absence from their names or signatures of the qualifying degree suffix by which it is announced to a frequently, recently, and intensively stimulated—if not enlightened—waiting world that the holder thereof is a superlatively trained, and highly qualified M.D., *a Doctor of Medicine;* who, alone, whether speaking, writing, practicing, or merely posing, has the necessary wherewithal to render adequate and effectual professional service.

Under quite different circumstances, but with similar fundamental motivation, the same phenomenon is exhibited in connection with our next-nearest professional competitor. This time it will be noticed that, by legal enactment—in at least most of the states supporting boards of chiropractic examiners—no licensed graduate of chiropractic can use the prefix "Doctor", unless he qualifies the same by the determining suffix D.C., or expressly denotes on his signs, cards, and office stationery, some visible evidence of the fact that he is a chiropractic doctor. The ultimate result is the same in both instances; for, through a steady stream of advertising, by one or another of various agencies and through devious channels, the fact is borne successfully to the consciousness of a credulous and highly susceptible—if not too observant—world that there is present in their midst a growing and apparently useful body of unashamed D.C.'s.

Much the same lack of hesitancy in using the penetrative advertising value of an earned degree suffix, as an effort toward securing the sort of attention that may hopefully result in the attainment of high opinion and public favor, is noticeable in the professional announcements of the D.D.S., the D.N., or N.D., the C.B.S., the D.P.H., the D.V.S., the Ph. D., the D.D., and scores of other exponents of some particular art, cult, science, business, or profession.

Not so, however, with the rank and file of the osteopathic brotherhood. In no state in the Union can it be truthfully reported that the public is definitely D.O. conscious—or even intellectually aware of D.O. qualifications, or, to any large extent, of its activating existence. In a rapid survey of the field, rating the staff-listings in our leading professional magazines which, although prepared "for the profession only" are rightfully found on the reading tables in hundreds of doctor's offices, down through the listings of north, south, east and west group-clinic staff members, and rating the great majority of individual card announcements—displayed here, there, and everywhere—the prefix Dr., is sometimes—not always—used, but the professionally identifying suffix D.O., is noticeable only by or for its well-nigh universal absence.

This may be one reason why politicians, as a general rule, are so loathe to take up their legislative cudgels, and act as public crusaders in our behalf. The seeker after public office is interested primarily in votes. At any rate, the mass-potential of available ballots weighs more heavily with him than the rights and sought-for privileges of an indeterminate number of individuals of doubtful strength in his constituency. As he or his henchmen tour the environs of the average ward or precinct; sift through the office buildings—great or small; read and remember the numerous hall, business, and civic guides and directories so easily obtainable and accessible; and canvass in many other ways the groups and individuals forming the electorate of any particular political bailiwick; there is little or no evidence forced upon his attention or his consciousness, which would indicate any considerable D.O. influence that he should either seek or shun as a potential aid or opposition.

The result of this paucity of evidence, suggestive of D.O. power—or even existence—leaves the average politician stone-cold to osteopathic bills, when they are read and discussed in party caucus; or presented in the legislative halls for some sort of action; or forced upon his attention by overzealous, frenzied lobbyists. Had he been previously prepared, however, by the definitive appearances of D.O., D.O., D.O., D.O., D.O., D.O., here, there, and everywhere that our doctors are in active practice—on office doors, hall and lobby directories, window signs, professional cards and announcements, civic, social, and luncheon club listings, and in the occasionally utilized advertisements of osteopathic specialists—instead of being assailed by the anemic "Dr.," which at its best is but a cryptic, undifferentiating, almost meaningless prefix—our wily politician who had heretofore been unaware of any D.O. strength available for registration purposes, might have been keenly alert, and even insistent, in his urging of claims for such a manifestly representative body of intelligent and progressive people.

A striking example of the extent to which the osteopathic profession—through failure of its membership to display their distinctive and instructive suffix title—is missing the opportunity for securing favorable public notice and attention, was brought to light in a recent survey, made in one of our largest cities. This survey was officially conducted by mature representatives in one of our largest osteopathic colleges, as a part of their compliance with the government's demand for some sort of constructive work—a *quid pro quo* for participation in the student aid fund, which had been granted them. The results secured by these investigators, were checked and verified by the State Inspector of the Board of Osteopathic Examiners.

During the course of the survey, the listed office addresses of 526 licensed osteopathic physicians were visited. Of this number 92 instances of vacancies by unreported removal, or resignation from practice, were discovered. Among the remaining 434, though all were licensed graduates entitled to the use of the identifying D.O. suffix no less than

thirty-nine identifying symbols or phrases were found on office doors, window signs, lobby directories, professional cards, office stationery, etc., etc., but *only one out of every twenty*—listed and visited—confined themselves to their designation or affiliation with osteopathy.

On breaking down the various findings of the survey, and segregating the particular material which dealt alone with professional identification, the following information was made available:

434 D.O. licentiates (out of the 526 addresses visited) were found to be engaged in active practice, and utilizing some descriptive form of professional announcement or identification. Of this number

173—almost one-half—made *no reference at all to osteopathy* on any of their announcements, signs, or office stationery. In this group

78 used the identifying phrase "physician and surgeon."

52 used the prefix Dr., with no qualifying suffix, or descriptive matter.

43 used—only—the name of the particular "specialty" they wished to publicize.

151—more than one-third—stressed their possession of a certificate entitling them to the designation "physician and surgeon." Of this number, 60 added the word osteopath, maybe as a therapeutic afterthought.

47—approximately one-tenth—used the title osteopathic physician.

38—less than one-twelfth—boldly declared themselves to be osteopaths, with no other qualifying title.

25—only—used the denominating suffix D.O.

In other words, in the one particular locality where a definite survey is known to have been made, scarcely more than *one out of every twenty* doctors of osteopathy are publicly using, as an identifying title, the particularly descriptive professional degree suffix—for which so many of them invested from four to six years of intensive, expensive professional training, and without which they could not have qualified for licentiate examination under the state board they chose to meet, which board is empowered to grant only such licenses as will legally entitle successful candidates to practice as Doctors of Osteopathy.

Such a condition of affairs does not reflect a high degree of professional pride—nor too much individually intelligent intellectual honesty—on the part of the D.O. licentiates. Nor does it render due credit to the professional institution, in which they received their distinctive training and from which they received their professional degree. Nor does it properly represent the scope and function of the Board of Osteopathic Examiners, whose sole province in this particular state, is to supervise the preparation, licensure, and active practice of men and women who hold D.O. degrees—and, hence, are supposedly representing themselves to the world as loyal members of the osteopathic profession. Nor does it add to the prestige and power of the profession-at-large, whose reputation and influence is gauged—at least in part—by the public recognition and professional loyalty of its licensed members and active supporters.

The Committee on Public and Professional Welfare would find its work much lighter, and more heartening, if it could be sure of the cooperation of twenty—or even ten courageous D.O.'s—instead of one, whenever and wherever it made an effort to sell the profession to the general public. As matters now stand there is a strong probability that many thousand unsuspecting individuals have already been cared for by doctors whom they never suspected of being osteopathic physicians. This may even have been the experience of some of the "Men on the Street" who were subjects of THE FORUM canvass, results of which were published in May, 1937. A similar canvass of listed members of fraternal lodges, luncheon clubs, civil, social, and religious organizations—to say nothing of bridge, bowling and country clubs—would probbably reveal a like ignorance regarding the real identity of some of their "Dr." titled—but not degree-suffixed, doctor members.

One of the disappointing features of this tendency to dodge the opprobrium of osteopathic relationship or allegiance (through the non-use of an identifying symbol) is the repeated tossing of complaints received at the offices of medical headquarters, to the investigating officers connected with the osteopathic profession. The complainants, having real or fancied grievances, simply know their physician as "doctor" (only one out of every 8 or 9 in the recent survey used anything but the Dr. in their publicizing); so, when any incident tends to strain the harmony of the physician-patient relationship, the injured party runs to what he believes to be the headquarters of all doctors—either the County Medical Association, or the Board of Medical Examiners. Before the medical investigators have discovered (?) that the alleged offender is an osteopathic physician, a whole hamper of "dirty linen" has been exposed, itemized, and recorded. All of this is a source of unmitigated pleasure to the medics, and a humiliating black-eye to the osteopathic profession.

In the October, 1937, issue of *Medical Economics* there appeared the following article, which holds a hope for a solution of the "identifying" problem.

FLORIDA TAGS HEALING ARTS

Florida has found a way to discourage professional swamis, nature healers, and their like from flying false colors.

A new law requires that all who claim to be doctors shall post a sign at their office entrance. A shingle carrying merely "Dr. So-and-So" is no longer enough. It must state to what branch of the healing art a man belongs. The letters must be at least two and one half inches high and one inch wide. This is to forestall the possible use of pinpoint type.

Six months in jail, $100 fine, or both, is the maximum penalty facing violators of the new law.

If, through the concerted action of our legislative committees, an enactment similar to the Florida statute could be promulgated throughout the states, it would have a strong tendency toward securing the larger measure of "public opinion and favor" which the osteopathic profession has so long sought. For then, by smoking out the high-powered "specialists"—and there were many varieties listed in our survey—a revelation of the broad scope of therapeutic training and practice made available to and through the osteopathic physican would become at once apparent to a hitherto unenlightened people. Incidentally, this work of educating the public to the possibilities inherent in our system. would long ago have been accomplished if the so-called "specialist" had boldly stated his professional

D.O. allegiance, instead of hiding behind the confusing, unrevealing cloak of Dr.

The whole subject of "aiding and abetting" would also be revised, and maybe rendered obsolete, if every licensed doctor would have to use his proper label. The art of "fronting" for inadequate or even unlicensed therapeutic mongrels is now a "racket" of extreme proportions. From the highly organized institutions, owned and operated by syndicated health-faddists and newspaper columnists, down the line to the massage parlors, salt, and mud bath honky-tonks, all that is now needed to beguile the public is the name and presence of a licensed doctor, and the air of professional respectability is assured and profited by. In the survey we have frequently mentioned, one out of every eight licensed osteopthic physicians listed himself with the prefix Dr., only, and was potential timber for the "fronting" build-up.

As to the present trend of near-quack advertising, where the osteopathic physician shields his identity by omission of degree or other tale-bearing symbols— except the ever-present prefix Dr.— no other practice can be so damaging to a profession of reputed standing. Newspapers, telephone directories, and even throw-away folders, now reveal to a palpitating public the assurance that for little money, less pain, and no loss of time—"by new methods of healing" they may be freed from the annoyances of leg ulcers, ruptures, piles, and all kinds of liver, gastrointestinal, woman's diseases and kidney disorders. To the initiated, all of these cryptic blatant babblings are attributable to osteopathic physicians.

Should it be possible to compel the osteopathic physician to use an unmistakable form of professional identification, it would surely cut down the amount of unfavorable publicity we now receive on each occasion when the misconduct of an unethical or malfunctioning—Dr.—practitioner is brought to the attention of a disciplinary body which, by precept and training, is openly inimical to the best interests of our profession. It would also reveal to the politicians, and the general public, a far different estimate of our numerical strength and potential power than has ever before been evidenced or available. No one can doubt the efficacy of this consideration, if the profession is in earnest about the accomplishment of its present "objectives."

"Opportunity" is an ancient individual, probably as old as "Time, the Reaper." He goes about from door to door (maybe reading the signs), but never forces his attentions on unwilling prospects. Inclination, and willingness to respond, must be the attributes of those visited. Negligence, and opposition to repeated calls, are matters of individual preference, but they bring their own resultant measure of frustration, regret, and reprisal.

Opportunity has been kind to osteopathy. It pointed out the paths of destiny to early pioneers of faith and vision. It challenged later builders, of intelligence and courage, to erect substantial enduring structures—educational and therapeutic—upon the bases of proved fundamental principles. It summoned from the growing ranks of devotees and followers a long procession of skilful, enthusiastic administrators and executives, and not a few more or less popular professional leaders. It directed thousands of embryo physicians into gainful avenues of useful service, who might otherwise have continued blundering through sterile fields of worthless rubble. It furnished countless other thousands, of the general public, a chance at sane therapy and hopeful living—without recourse to damaging subterfuges.

And now, there comes a clamorous call—with here and there a discordant echo—for a *united* professional body to withstand the threat of approaching dominance through aggressive therapeutic opposition and limitless legalistic oppression. The fate of osteopathy may well depend on the response we make to this unmistakable and ringing summons. Strong forces will be arrayed against us in now-pending legislative battles throughout the state and nation, which, if successful, will ultimately result in the erection of legally effective bulwarks against our entrance into the unavoidable and fast approaching confines of state —or socialized—health and medicine. Our old friend "Opportunity"—patient, kindly, and persistent—shows us the modus operandi of neutralizing the effect of the superior forces we must meet—and conquer. It is the old, but ever new, procedure of "fighting flame—with fire."

Since the determining factor in the allocation of professional rights and privileges, under the coming system of governmental therapeutic subsidies, will depend upon the successful counting of representative noses in the Senate and the House of Representatives—it is but an academic step in reasoning to assume that evidences of elective strength and solidarity in the respective branches of professional "healing" will have great weight in swaying the ultimate direction of the final balloting. To gauge the influential strength of our leading adversary and competitor, will be no task at all for the wily politician. As a matter of fact, he will be met halfway—or more—with every available attention-attracting device except, perhaps, the waving of flags, balloon displays and streaming pennants.

The same cannot, as yet, be said of osteopathy. A select and favored few will always be easily found and readily identified, bearing, as they do, the unmistakable symbols of their "class", and awaiting as of old, the approach and call of their friend and ally—"Opportunity." But, a large closed, majority, if found at all, will be behind soundproofed, doors; through which repeated "knockings" of "Opportunity"—or any other personal or general appeal—calling for professional loyalty, co-operation, and devotion, may never penetrate. And if, perchance, these "members-in-name-only" should be smoked out of their seclusion—by legal process, or any other influence than their own volition—the "Dr." alias they are wearing would offer no convincing evidence to the evaluator of D.O. numbers, influence, or power, that the combined D.O. strength available for use in voting booth or party caucus, was worth the struggle for corraling and later governmental appeasement. Hence the time is ripe for a general campaign to make the D. O. symbol a mark of recognition and allegiance to a truly representative professional body.

In days of old, when there were but three avenues of popular distinction and choice was limited to medicine, law, or military; the title "doctor" was an asset of great worth and value. Today, however, when the democratic leveler of pursuits and men minimizes all class distinctions, the prefix Dr. of and by itself is more misleading than distinctive. On the other hand, there can be no mistake in professional identification when use is made of a determining degree or letter suffix. The wearer of the symbols M.D., D.O., D.D.S., D.V.S., or any other earned suffix-combination, is at once placed in an unmistakable and distinctive category. But, the Dr. prefix—by itself alone—may mean little or nothing in this day of increased opportunity and acquisitive enlightenment; for the term "doctor" may be facetiously but unblushingly applied to, and by, practitioners who deal with toys, animals, trees, dolls and humans—and no offense will be given or intended.

As the leaves of our metaphorical arboreal structure (with which we started this disquisition) are the breathing-organs of the tree, and the blossoms are its forerunners of an abundant fruitage, so should the individual members of a human organization furnish the breath-of-life to root, trunk, and branches of its parent body; and offer admissible evidence—through their functioning—that the entire structure is worthy of respectful consideration, and of decided value in any particular field of constructive usefulness.

There is no evidence in nature that the oak leaf tries to simulate the maple; or that acorns attempt to masquerade as coconuts. Man seems to be the only creature who longs to wear a misfit garment, and strut before the world in other rôles than he is cast for. True, the donkey is reported once to have tried to mimic the lion; but, for his efforts, he became an object of derision—and to the world at large, he only emphasized his asininity. The right of an individual to be and become what he desires is incontrovertible except when—by his attitudes and conduct—he minimizes the worth and value of his group relationship. When the rights of an organization are about to be invaded, or an injury is threatened which may result in loss of advantages—which might otherwise be gained—it is then time for the honest individual to forget his idiosyncracies, submerge his peculiarities, and identify himself as a loyal member of his group or species.

The osteopathic profession now needs and requires the individual aid and assistance of every possessor of a D. O. degree and license. The functional strength of professional numbers and the additional influence of countless thousands who have knowingly experienced D.O. care and therapeutic guidance, must be brought into the open if we are to hope to impress at all the powers that will determine upon our fitness and usefulness—when the coveted positions that will be awarded to the alert and ready are distributed by the supervising agents of schematized social therapy. For any considerable number of our profession to continue to hide behind the mongrel "Dr." title, or to persist in aping other types of therapeutic licensure, or to give further abetting counsel and professional assistance to unlicensed practitioners, or inferior competitors, is but to court discomfiture and insure defeat in the day of reckoning—for governmental consideration.

From the top to the bottom of our organizational life there should be urged upon the profession—in addition to the accomplishment of whatever "objectives" may be now before us—the expediency and necessity incumbent on every osteopathic physician to stand out in his true relationship to the osteopathic institution from which he received his training, to the examining board which passed upon his osteopathic credentials, to the type of licensure he was granted, which was dependent on his proficiency as an osteopathic physician; to the privilege and responsibility resting on him, as he appears before the world, not as an ambassador of an indiscriminate Dr. cult, but as a representative of a type of therapy which has divorced itself from superstition, mumbo-jumbo, trial and error, and the hoary mysticism of a self-professed but badly cracked infallibility.

The osteopathic profession came into being, and attained a fair measure of popularity and power, because it offered something distinctive to a world which had grown distrustful of the efficacy and efficiency of pills and nostrums, and their dispensers. The original announcements of D.O., on windows, doors, and office stationery, drew—still draw—large numbers of ailing people from their old allegiance to an outgrown dependence on nauseous potions, and the eructating pomposities of those who first prescribed them. To backtrack now, in the face of possible governmental recognition of our worth, is a public invitation to witness our self-imposed destruction as a distinctive branch of the art of healing. More than ever before should the D.O. symbol be brought to the conscious attention of every individual in our civil and social environments; and even more increasingly should it be forced upon the attention of that chosen group who function politically as representatives of the general public.

Our ultimate defeat—if it should so eventuate—will not be due to any lack of education, training, or professional skill in therapeutic practices. It will, however, be directly chargeable to lackadaisical indifference to the claims of loyalty, and its resultant weakness in attaining solidarity. In other words, we have not succeeded in making the strongest impression that we should, in view of the possibilities inherent in our fundamental principles and the actual number of representative personalities available for their public demonstration. Our membership—in large part—has apparently been less insistent in letting the world know that D.O. stands for Doctor of Osteopathy, than it has been in reaching up and down in other fields of unrelated therapy. Whatever purpose this may have served, aside from concealment of professional identity, it has seriously weakened the position of the organization as a whole—to the extent that it is altogether within the province of the innocent bystander to raise a question as to the real meaning of the term D.O., and whether it may not have a double application, one of which has been extremely evident—in that it screams of *Dodging Opportunity*.

702 Dos Robles Place.

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THE CANCER PROBLEM

The cancer problem is being attacked on many fronts. The research worker, the surgeon, the general practitioner, the pathologist, the chemist, and the statistician are combining their efforts to eradicate this common enemy of civilization.

According to the tables of the Metropolitan Life Insurance Company, the death rate from cancer among industrial policyholders in the United States in 1936 was 86.2 per hundred thousand as contrasted with a rate of 86.7 in 1935 and 88.2 in 1934. These statistics indicate that the death rate from cancer is headed down, but the decrease is so slight, no activity aimed at the control of cancer should be dispensed with; instead our efforts should be redoubled.

Perhaps this slight decrease in death rate is the result of more accurate diagnoses being made by physicians than formerly, followed by improved surgery and irradiation technic. In 1934, the Clinical Congress of the American College of Surgeons reported 2,077 cases of five-year cures. Education of the people in the early symptoms of cancer may also account for this slight decrease, because more cases find their way into the doctors' offices in an earlier stage of the disease than formerly and consequently they are taken care of more promptly and the disease eliminated more easily.

The importance of early diagnosis needs to be stressed continually. For that reason the American College of Osteopathic Surgeons presents in this and the next issue of its Surgical Supplement a group of articles written for the express purpose of aiding the general practitioner in his task of detecting early malignancies, and in evaluating methods of treatment. Many fine papers were submitted by various members of the College. In order that all of them may be used, we have divided them arbitrarily—those by Drs. A. C. Johnson, R. P. Baker, H. L. Collins, W. Curtis Brigham, and Paul T. Lloyd appear in this present issue; those by Drs. Edward G. Drew, Harold A. Fenner, and O. O. Bashline will appear in the next issue of the Surgical Supplement.

As an added feature of the present issue, there is presented an article on osteopathic hospitals written by Dr. H. C. Wallace, President of the Associated Hospitals of Osteopathy. This interesting paper contains a short history of some of the early osteopathic hospitals and concludes with a list of hospitals which have reported to the Associated Hospitals of Osteopathy. As Dr. Lloyd pointed out in his report to the Executive Committee of the A.O.A. at its midyear meeting, there is a dire need for more osteopathic hospitals which teach interns because the demand for intern training on the part of those applying for licenses is steadily increasing. It is hoped that in the very near future more osteopathic hospitals will be approved as teaching institutions.

A PLEA FOR EARLY DIAGNOSIS IN GASTRIC CARCINOMA

Carcinoma of the stomach can be expected to result fatally within a period of months if nothing is done to arrest the progress of the disease.

Although the conscientious physician avoids the use of the "cancer" bugaboo as a means to force a prospective patient into a more amenable state of mind, his careless disregard of the danger of delay in suspected carcinoma of the stomach is nothing short of criminal.

Patients cannot be expected to diagnose properly their many illnesses. Neither can they be expected to enter the physicians' offices with minds free of prejudices and doubts toward modern trends in surgery and the qualifications of the physicians who claim an ability to heal the sick. The true physician not only must be versed in his science, but also in the art of diplomacy.

The possibility of carcinoma attacking the stomach is something which must be thought of constantly. If it is suspected in a patient, then a series of nice procedures must be undertaken, which only the conscientious physician will laboriously call to hand. Carcinomata situated elsewhere, for instance in the uterine cervix, or in the rectum, can be diagnosed with ease if the physician will go to the trouble to obtain a specimen of the suspected tissue for examination. However, the biopsy specimen cannot be obtained from the stomach, except at the time of surgical operation. Consequently the physician, when aware of the patients' early symptoms indicative of gastric carcinoma, must leave no avenue of investigation untried until he definitely determines the meaning of those symptoms.

And even after the physician has satisfied himself that the patient's life is in danger, he must make up his mind whether or not relief by surgery is still possible. This is truly a serious responsibility.

Not many will question the statement that surgery offers the only hope of a cure in gastric carcinoma. Such hope is without foundation if the diagnosis is not an early one; surgery offers nothing of permanent value if the growth has already metastasized to various parts of the patient's body. Once there has been metastasis, or once the cancer

has invaded surrounding structures, surgery can at best offer only relief from suffering and thereby add a few months to the life of the patient.

At the moment the presence of a gastric carcinoma is suspected, the physician's responsibility begins. Without undue delay the physician, worthy of the name, will refer the patient to a qualified radiologist for thorough x-ray study. By qualified radiologist I mean one who knows the meaning of all the little puzzling things to be seen on a skillfully exposed film.

Of course if the physician has already discovered the metastatic extension of an epigastric mass into a supraclavicular lymph node, or has palpated the nodular mass in the abdominal cul-de-sac (upon rectal examination), the x-ray procedures automatically become of less importance; they then become useful for determining the possibility of some relief of distressing symptoms by surgery, or merely to satisfy the curiosity of all concerned. In the presence of demonstrable metastases, the patient is doomed. Nothing remains but palliation by gastroenterostomy or other surgical procedure, and the treatment of symptoms as they arise, with digestants, sedatives, irrigations, etc.

It is not unusual for a gastric carcinoma to catch us napping, so to speak. We are inclined to prescribe an alkaline powder for what we hope is hyperacidity or, at worst, an ulcer. We may even advise a trial of the Sippy regimen.

To be sure, gastric or duodenal ulcer is much more frequently found than carcinoma. In a patient under forty years of age, careless diagnostic procedures are attended by less danger than in an older patient.

Nowadays the well-qualified radiologist should be able to demonstrate the presence of duodenal or gastric ulcer. And more than 90 per cent of gastric carcinomata give roentgenologic evidence of their presence, especially if the radiologist uses the small barium dose technic which gives a well-contrasted gastric mucosal pattern upon which ulcer or tumefaction can more readily be seen than if a larger dose is used.

In the early lesion the radiologist cannot be expected to differentiate between the benign ulcer and one that is undergoing malignant changes. In such cases the physician will do well to rely somewhat upon the experience of the ages—the ulcer in the duodenum in all probability is benign and will always remain so, whereas the ulcer anywhere in the stomach is potentially malignant if not actually so.

It seems to be the consensus of surgeons that the duodenal ulcers deserve a period of watchful treatment before operation is resorted to. Duodenal ulcers frequently heal under proper treatment. On the other hand they sometimes perforate or bleed or produce obstruction.

When the x-ray examination discloses an ulcer or a mass upon the gastric side of the pylorus, a different plan of procedure must be outlined. To the dangers of perforation and hemorrhage there must be added the possibility of malignancy, with its invariably fatal outcome if nothing is done to circumvent it.

If the patient is a man (three times as many men as women have gastric carcinoma) between the ages of 45 and 60, if he complains of an almost constant dull ache in the epigastrium—a distress that is not definitely relieved by food or alkalies, if he complains of impaired appetite and attacks of nausea, if he has lost weight and color, the possibility of gastric carcinoma must be ruled out as soon as possible.

It is well to investigate the blood sedimentation curve. If the curve is sharply downward, the finding is significant; if negative, we must not be lulled into a false feeling of security.

In case the radiologist's findings support the evidence uncovered by the physician, the decision as to what it is best to do next must be quickly forthcoming if the patient is to receive the maximum benefit of treatment.

Taking it for granted that gastric carcinoma will surely prove fatal if the process cannot be arrested, and that up until the present no treatment other than surgical eradication of the growth has proved successful, only one reasonable procedure remains, namely, exploration of the abdomen.

Naturally, if the disease is so far advanced that the patient is practically moribund, or if his condition is such that the combination of anesthetic and operation will likely result fatally, then, of course, no exploration is indicated. But in most early cases where the hemoglobin percentage is seventy or more and the red cell count is close to four million, the risk of anesthesia and operation may well be taken.

In these exploratory operations the surgeon must be prepared to cope with any surgical problem that may be found after the abdomen is open. The problems to be solved in surgery of the upper abdomen are oftentimes startling, and a nice surgical judgment is fully as important as nice surgical technic. A beautifully performed operation based upon faulty surgical judgment is of no more value, and indeed is likely to be far more harmful to the patient, than if no operation had been performed.

Gastroenterostomy per se is a comparatively simple procedure. But gastroenterostomy offers nothing in the way of permanent relief for gastric carcinoma. It must be combined with resection of much of the stomach along with suspicious lymph glands. Gastroenterostomy alone may bring about the cure of duodenal ulcer, but gastroenterostomy alone cannot be depended upon to bring about a cure of gastric ulcer. Gastric ulcer, in all cases, whether benign or malignant, should be considered malignant or potentially so, and should be completely eradicated surgically, if it is possible to do it.

If, upon exploration, the gastric lesion proves to be beyond the possibility of surgical removal, the surgeon's judgment and experience must tell him what to do to make the patient's last weeks more comfortable.

At the hands of the well-qualified surgeon, the death rate following partial resection of the stomach is in the neighborhood of 15 per cent. However, less than 25 per cent of gastric carcinomata are removable at the time exploratory operation is undertaken. This presupposes that only 75 per cent of the cases are fit even for exploration. Of the 25 per cent unfit cases many are within a few weeks of death, but even though there are some who are not moribund, the x-ray examination plainly shows that palliative surgery is out of the question.

The purpose of this editorial is to urge the physician to be on the lookout for gastric carcinoma in its early stages. Almost anybody can make a correct diagnosis after the patient has become moribund. What has been preached by authorities for many years concerning the early recognition of all types of carcinomata is peculiarly applicable to gastric malignancy. Being hidden from our view, gastric lesions are likely to pass unsuspected until the period of operability has passed.

A certain percentage of gastric malignancies can be eradicated by surgery in the early stages. None are amenable to surgery in the late stage.

Gastric malignancy should always be considered as possible in patients past 40 years of age who complain of much "indigestion."

The x-ray is the most important of all diagnostic aids. By recently improved technic a capable radiologist can see evidence of gastric malignancy in 90 per cent of the cases.

Following positive evidence of gastric malignancy, all patients who are not obviously beyond human aid are deserving of surgical exploration at the hands of a capable surgeon.

Nearly half the cases that come to operation are fit subjects for partial gastric resection. The others may undergo palliative operations for the relief of later suffering.

ALBERT COLLOM JOHNSON, D.O.,

That Lump in the Breast

Some Questions and Answers

R. P. BAKER, D.O.
Lancaster, Pa.

(1) What are the conditions usually responsible for "lump" in the breast?

Practically all chronic lumps in the breast are cysts, adenofibromata, or cancer. Uncommon causes are fat necrosis, tuberculosis, and syphilis (gumma). These are rarely seen.

(2) What is the most important question as to the nature of the lump?

Whether or not it is cancer.

(3) Is age of the patient of help in reaching a decision?

Yes. Although cancer of the breast has been reported in young girls, it is rare under 35 years of age and most common about and after menopause.

(4) Is the pain history of diagnostic value?

Yes. Except in well-advanced cases, cancer of the breast is painless. As a rule, early cancer is accidentally discovered by the patient or found by the physician during a physical examination. With a history of varying degrees of discomfort sometimes radiating toward the axilla and usually worse near menstruation, the cause in all probability is not cancer.

(5) What may be learned by inspection?

One should look first for deformity. A large lump in a small breast distorts the organ; a small lump in a large breast may produce no deformity. Next, symmetry is considered: are the nipples in the same horizontal plane? If the breast containing the lump is higher, it suggests that contraction has occurred within the organ as a result of cancer. If the nipple is retracted, further evidence of cancer is provided. Next, the skin over the lump is carefully inspected in search of pitting similar to that found in pigskin and orange peel. Given a lump—and retraction—and pitting of the skin, the question of benignancy or malignancy is settled: the lump is malignant. It is not a cyst and it is not fibroadenoma. It is cancer. Often the diagnosis can be made at a glance.

(6) Is the lump ever cancerous in the absence of pitting of the skin or visible retraction?

Yes indeed. If the cancer is situated deeply within the gland, pitting will not occur until the tumor has spread sufficiently to approach the skin covering that part of the breast. The same answer applies to retraction. The beginning of cancer is microscopic. Relative size of the tumor and breast will determine the degree of retraction. As the tumor increases in size, infiltrating surrounding tissues, increasing fibrous contraction occurs causing increasing retraction.

(7) What may be learned by palpation?

We are interested in several things which may be determined by palpation. The number of lumps is of importance. It is extremely rare for cancer to start in more than one location, hence when more than one mass is found, malignancy is much less probable. Again, if gentle compression of the lump or lumps causes discomfort, cancer is not likely present. If the lump feels encapsulated and sharply circumscribed, and is movable within the tissues immediately surrounding it, it must be a cyst or fibroadenoma. Cancer is an infiltrating growth, spreading into adjacent tissue something like roots of a tree. This results in an indefiniteness of outline which is typical of cancer. Benign growths do not invade the pectoral fascia, hence are always freely movable on the fascia. Cancer, on the other hand, if in close proximity or sufficiently advanced, does

invade the pectoral fascia, becomes fixed to the fascia, and will not move upon it.

(8) How should palpation be done?

The answer to this question deserving the greatest emphasis is that palpation should be done with the utmost gentleness. Picture, if you will, cancer cells infiltrating vessel walls, both blood and lymphatic, where by direct extension they progress with and against the stream. Then think of a few cells of this small, friable mass being dislodged and floating elsewhere with the stream of blood or lymph; with this in mind, one palpates gently. It has become my habit to examine the breasts with the patient in two positions. First the patient is seated at the end of an examining table. I sit facing the patient. Following inspection, I gently grasp the breast between my thumb and fingers. The patient then assumes the supine position and with the flat of my hand the breasts are gently pressed and moved about on the pectoral fascia. Following this, the axillary contents are carefully palpated while the arm is moved between adduction and abduction.

(9) Is transillumination a dependable test?

Not entirely. Cysts are translucent except when filled with blood, which is uncommon. When this occurs, it is due to a bleeding papilloma growing on the cyst wall. About half the papillomata become malignant. Fibroadenomata are not translucent. Cancer is not translucent except in very rare instances. The conformation of some breasts makes them difficult to transilluminate satisfactorily.

(10) Do fibroadenomata of the breast change to carcinomata?

No. Fibroadenomata do not become carcinomatous. Rarely one undergoes tissue changes resulting in a rapidly growing and malignant fibrosarcoma.

(11) Is the absence of palpable axillary glands an indication that the lump in the breast is not cancer?

By no means. That axillary glands are not palpable indicates only that the glands are not sufficiently enlarged to be palpated. Metastasis may not have occurred, or may not be located in such a position, or may not be large enough to palpate externally.

(12) Is the presence of palpable axillary glands conclusive evidence of cancer?

Not necessarily. Enlargement of the glands may be the result of inflammation.

(13) Is the blood sedimentation rate increased in early or moderately advanced cancer of the breast?

No.

(14) Is chronic ulceration of the nipple an indication of cancer of the breast?

Yes. Chancre of the nipple may occur, but will not become chronic, and serological reactions will soon become positive if antiluetic treatment is not started promptly.

(15) Is the mammary gland ever involved in the secondary stage of syphilis?

No.

(16) Do gummata form in the breast?

Yes. Gummata of the breast have been reported but are very rare. They present characteristics so similar to cancer that microscopic examination may be necessary for accurate diagnosis.

(17) What other infection may be mistaken for cancer?

Tuberculosis. Prior to sinus formation with drainage, tuberculosis of the breast may be mistaken for cancer by clinicians of broad experience, but tuberculosis, like gumma, is extremely rare.

(18) Is blood-stained discharge from the nipple an indication of cancer of the breast?

Not necessarily. Blood-stained discharge from a normal nipple originates in a dilated duct on the wall of which is a bleeding papilloma. About 50 per cent of papillomata become cancer.

(19) When is cancer of the breast most rapidly malignant?

When occurring in young patients and during pregnancy and lactation.

(20) Is biopsy often necessary to diagnose cancer of the breast?

No. The surgeon usually has a very definite idea as to the nature of the tumor. When in doubt, he may do a simple mastectomy, then examine the tumor by means of inspection and palpation, and with the edge of his scalpel. An increasing number of surgeons prefer this to the results of hasty preparation and study of frozen sections. In gumma and early tuberculous infection one may go wrong, but those are extremely rare and he will more commonly err on the right side. Preoperative biopsy is frowned upon by many.

(21) What is the treatment for bleeding papilloma?

The safest treatment is mastectomy.

(22) What is the treatment for cyst?

Single cysts have been aspirated but are usually removed. For multiple cysts, which are more common, mastectomy is done.

(23) What is the treatment for cystadenoma?

Mastectomy.

(24) What is the treatment for cancer of the breast?

Surgical removal of the axillary contents, the pectoralis major muscle, and the breast.

(25) Is irradiation used in the treatment of cancer of the breast?

Yes. Although carcinoma of the breast is quite radioresistant, an increasing number of surgeons are employing irradiation as pre- or postoperative treatment. Although radium is used at times, the roentgen ray is more commonly employed. Little has been accomplished by irradiation without surgery.

(26) Is irradiation to the ovaries used in cases of breast cancer?

Yes. Young women who have been operated on for cancer of the breast are sometimes given sterilizing doses of roentgen ray to reduce activity of the other breast, thus making it less susceptible to cancer. The value of this, however, is a debatable question.

(27) When is carcinoma of the breast considered inoperable?

When metastases have spread beyond the axillary lymph glands or to the abdomen or pelvis.

(28) Is surgical treatment ever justified in inoperable cancer of the breast?

Yes. When it may relieve pain or rid the patient of a foul-smelling discharge.

(29) When is the best time to do something about "that lump in the breast"?

Now.

45 East Orange St.

Carcinoma of the Uterus

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Most investigators claim that the incidence of cancer of the uterus is increasing. Part of this increase may be attributed to more careful reporting of cases, and to the fact that more people reach the cancer age than formerly.

The mortality in uterine cancer still remains much too high. There are three chief factors responsible for this high mortality:

(1) Ignorance on the part of the public as to the early symptoms, the fact that pain is a late symptom, and the fact that the general health is not impaired until late in the disease; also, the dread of cancer on the part of the public and the still prevalent belief that cancer cannot be cured. Case records still show that a large per cent of women with uterine cancer come to the doctor too late to obtain a cure.

(2) The failure of the physician to examine the patient adequately, his failure to recognize the disease early, or his failure to give proper advice.

(3) There are a few cases which actually do not present symptoms until too late for the cancer to be eradicated. This occurs only occasionally, however.

Cancer of the uterus usually appears around the time of the menopause and after the menopause, but it is occasionally found at an earlier age. The earlier the age that a patient develops a cancer, the more malignant it usually is. The symptoms of carcinoma of the uterus may be outlined as follows:

(1) An irregular uterine bleeding upon exertion (following strain at stool, coitus, or a douche).

(2) A bloody discharge between periods or an increased amount or lengthened duration of the regular flow.

(3) Any sort of bloody discharge after the menopause.

(4) Leukorrheal discharge, which may be clear, watery, blood-tinged or foul. Its presence should cause suspicion and prompt a thorough examination.

(5) Pain. This is a late symptom and usually means that the cancer has ceased to be a local disease and has extended to adjacent tissue.

(6) Loss of weight and cachexia. These are late symptoms, too late to hope for eradication of the cancer.

Patients consult a physician to obtain relief from symptoms; if the importance of an examination is properly explained to them, seldom will they make any objection to the procedures necessary for the establishment of a diagnosis.

Malignancy in multiparae usually develops at the cervix of the uterus, and its location is around the external os. If well-defined, a friable area, which bleeds easily on examination, can readily be found. If the pathology is not this far advanced, suspicious ulcers should be excised for microscopic examination. Painting the cervix and vaginal vault with concentrated iodine solution sometimes aids in the selection of the site for obtaining the biopsy specimen, as the tissue under suspicion does not take the stain as readily as the uninvolved tissue and remains a lighter hue.

If the cancer is in the cervix above the internal os, the disease may be overlooked during the early stage. During the examination of a well-established case, the finger sometimes can be inserted through the external os and an irregular and friable bleeding area just inside the canal can be contacted.

If the cancer is above the cervix in the cavity of the uterus, its presence can be determined in the early stage only by a diagnostic curettage and microscopical examination of the curettings obtained.

In the late stages of uterine cancer, when it is no longer a local disease, whether it be a cancer of the cervix or of the body of the uterus, the uterus may be so limited in mobility as to be practically immobile and is sometimes termed "a frozen pelvis." This restriction of motion appears earlier in a cervical cancer than it does in one developing in the fundus of the uterus. In either case, restriction of motion of a malignant uterus signifies a grave situation and the likelihood of eradicating the disease is not favorable.

Occasionally a cervical polyp will cause irregular bleeding. The polyp should be removed, the base cauterized and a careful microscopic examination made. Following this operation, the patient should be under close observation, and if the bleeding ceases, one can assume the polyp was the cause of the symptom. If the bleeding does not cease, curettement for diagnosis should then be done.

Treatment.—Cancers of the uterine cervix, if found early enough, can be eradicated. Several cases from our own records substantiate this claim: one of eighteen years following operation without recurrence and several of ten years or more since treatment without any evidence of return. Unfortunately, however, the percentage of recurrences still far exceeds the percentage of "cures," but in every instance the disease had progressed until cancer cells had invaded tissue outside of the uterus before the patient presented herself for treatment.

In our opinion, radium therapy is indicated in all cases of carcinoma of the cervix. The complete destruction of cervical carcinoma accomplished by the proper use of radium has made it the agent of choice. Even in the very early so-called operable cases, radium results are on a par with radical surgical removal, and the mortality is zero in these cases with radium which is, of course, more than can be expected in those cases where a radical removal of the uterus and adnexa is done surgically.

Even in hopelessly advanced cases the results are at times astonishing; occasionally a patient makes a clinical recovery and lives for two or three years in comparative comfort. However, in advanced cases, palliation is all that can be expected from the use of radium; it affords relief from hemorrhage and discharge with the prolongation of life, death eventually resulting from metastasis rather than the local destruction with the filth, hemorrhage, and pain accompanying it. Advanced cachexia is a contraindication to the use of radium, but severe anemia from hemorrhage is not. The anemia in these cases, of course,

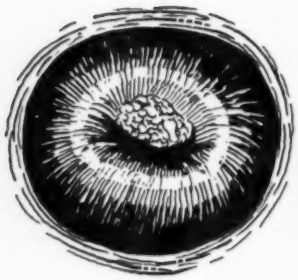

Fig. 1

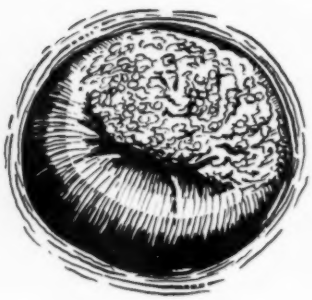

Fig. 2

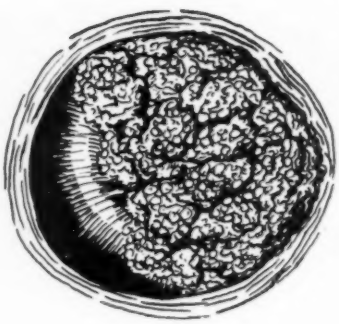

Fig. 3

Fig. 1.—Very early carcinoma of the external os uteri. Fig. 2.—Well-established carcinoma of the external os uteri, beginning to invade the cervical canal and vaginal wall. Fig. 3.—Carcinoma of the external os uteri, developing the cauliflower-like growth typical in this condition. There is possibly some invasion of the parametrium at this stage.

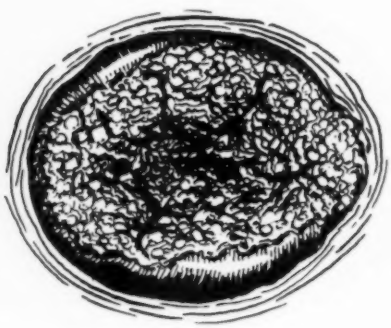

Fig. 4

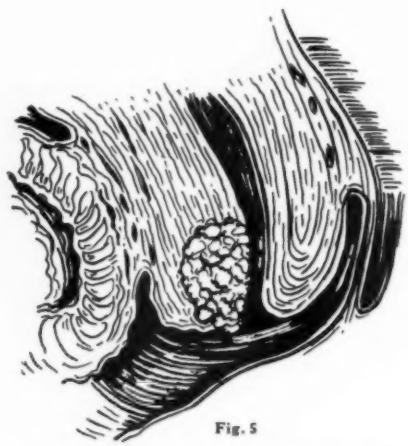

Fig. 5

Fig. 4.—In this picture necrosis of tissue has taken place, destroying the cervical tissue with the production of a wide, crater-like ulceration. At this stage there probably is a definite infiltration of the parametrium. Fig. 5.—Illustrating less frequently found carcinoma of the cervix beginning in the cervical canal, not manifesting itself at the external os until well established.

Fig. 6

Fig. 7

Figs. 6 and 7.—Showing early and late stages of adenocarcinoma of the corpus uteri. The parametrium, lymphatics, and adjacent structures probably are involved in the stage shown in Fig. 7.

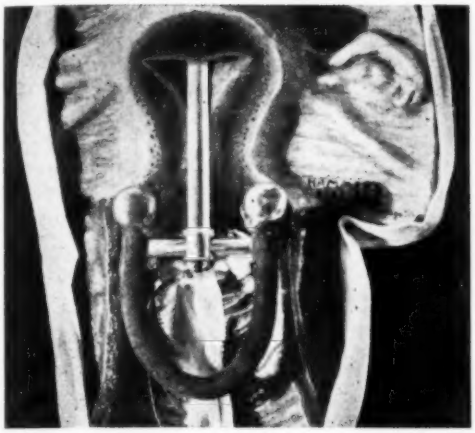

Fig. 8.—Diagrammatic photo representing one of the methods of applying radium for cancer of the cervix uteri. Radium is placed in the long upright tube which lies in the uterine canal; also radium is placed in the crossarm which lies against the cervix as well as in the capsules which are placed in the right and left vaginal fornices and held in place by the U-shaped rubber-covered spring.

Comparatively small doses of radium used for several days have been found more effective than a large dose for a short period. An average dose would be from 38 to 50 milligrams of radium distributed in these containers illustrated, which are kept in situ four days, delivering thus approximately 5,000 to 6,000 milligram hours of radium. One application usually is sufficient.

should receive proper treatment also; at times, even blood transfusions may be necessary.

Usually but one radium treatment is necessary. This requires approximately four days or ninety-six hours with radium properly screened in the uterus and vagina, giving a total dosage of from 5,000 to 6,000 milligram hours. A comparatively small amount of radium heavily screened for a long period of time, rather than a large amount of radium lightly screened for a short period of time, has proved to give the best results. Figure 8 illustrates one method of application. In the opinion of many, malignant disease of the *body of the uterus* is treated more successfully by radical surgical removal of the uterus. Though it is true that carcinoma of the uterine fundus is less amenable to the effect of radium than carcinoma of the cervix uteri, the disease in the former location is often so far advanced that surgical eradication is impossible. Furthermore, in recent years, with the increase of our knowledge in the application of radium, more and more of even these cases are being handled with radium instead of surgical removal and the end results are approximating those of surgical removal with a marked decrease in the immediate mortality and morbidity overwhelmingly in favor of radium.

In these cases of carcinoma of the body of the uterus, the procedure selected to combat it should be decided for each individual case. In the early ones, complete hysterectomy with radical removal of tubes, ovaries and upper part of the vagina, preceded or followed by radium or x-ray therapy, is the procedure of choice. In individuals where the disease is farther advanced, surgical removal is out of the question. In these, radium alone will stop hemorrhage, dry up the offensive discharge, prolong life and make their remaining days more comfortable.

CONCLUSIONS

(1) Cancer in its early stage is curable. The public must be taught this fact.

(2) Cancer of the uterus usually gives symptoms in that early stage.

(3) Most of the deaths from uterine cancer may be attributed to delay of treatment, either on the part of the patient or the physician, and are therefore unnecessary.

(4) The laity should be made to realize that any irregular flow, a bloody discharge, watery discharge, or definite leukorrhea is not always caused by change in life, but in a large per cent of cases means malignancy.

(5) Physicians should make an early, careful examination and give the proper advice at once.

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Cancer of the Sigmoid

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Every physician who has cared for a large number of cancer cases has his own views as to the cause of the affliction. It is not my purpose to discuss the fine points of technique in this paper, but to lay down some broad principles that may guide the general practitioner, and that, I hope, will encourage the patient to cooperate to the fullest extent with his physician.

The majority of physicians believe:

(1) that local irritation of the epithelial structure is a factor in the cause of cancer;

(2) that in most cases there is a history of toxemia over a long period, a history of local irritation, and in many a history of cancer in the family;

(3) that in cancer of the sigmoid the early symptoms may be vague, such as intermittent constipation and diarrhea; chronic constipation gradually more noticeable; sensation of incomplete emptying after defecation; headache, capricious appetite, sense of fullness, excessive gas—gradually more and more exaggerated; slightly bloody stool; increasing toxemia, malaise, and eventually evidence of obstruction of the bowel.

It is evident that any of the above symptoms should be carefully evaluated in every case. Early diagnosis and treatment are important for success in the treatment of any case suffering from cancer. It is generally believed that cancer may be grafted into a susceptible individual. The average general practitioner does not administer specific treatment for cancer. Patients are referred to the x-ray specialist, the surgeon, or the internist for specific treatment.

In approaching the cancer problem, the general practitioner is naturally faced by many questions, for every cancer case has general problems that need attention as well as the special problem. He may ask the specialist questions such as:

(1) Has the patient a nutritional problem?
(2) Has the patient articular lesions?
(3) Has the patient soft tissue lesions?
(4) Has the patient foci of infection?

(5) Has the patient an endocrine imbalance?

(6) What are the blood chemistry findings?

(7) Is cancer contagious?

(8) How long must the patient be under the doctor's care?

(9) Will the specialist inform the patient as to his diet, hygiene, medical requirements, and general habits?

To the foregoing questions I would make these specific suggestions:

(1) All cancer cases and particularly those suffering from cancer of the sigmoid have nutritional problems. These patients suffer retention of waste material in the colon and in practically every case the fecal matter is alkaline. To correct this phase of the problem I recommend the following principles in diet:

(*a*) Cereal intake should be limited to two or three slices of bread daily.

(*b*) Elimination of milk and cheese from diet.

(*c*) Fruits and vegetables may be taken freely.

(*d*) One small portion of light meat may be taken daily.

(*e*) Meat gravies, granulated sugar, candy, and alcoholic beverages should be avoided.

(*f*) Spinach, prunes, cranberries, and other foods classed as roughage should be avoided.

(*g*) All food should be very thoroughly masticated and liquid or semiliquid foods should be thoroughly mixed with saliva before they are swallowed.

(*h*) One to two ounces of sugar of milk in sixteen ounces of water and the juice of a lemon should be taken one-half hour before breakfast every day.

(*i*) It is advisable to use freely vitamin B as found in yeast tablets or in some other form, as the doctor prescribes. At least 500 Sherman units should be taken daily.

Some of the mucilaginous materials may be used to give bulk and moisture without irritation in the colon. I merely suggest the above outline. Every case has special problems.

(2) It has been my experience that most people suffering from cancer of the lower bowel have lumbar, lumbosacral or sacroiliac joint lesions. These should be given attention in every case after x-ray has demonstrated that there is no metastasis to the bony structures.

(3) The majority of these cases have suffered adhesions between the upper arm of the sigmoid and the soft tissues of the left iliac fossa for months or even years prior to the onset of the cancer lesions.

(4) Foci of infection are frequently present in teeth, tonsils, sinuses, gall-bladder, appendix, or pelvis. Such foci should not be neglected, though it may be necessary to delay treatment until after surgery and x-ray therapy.

(5) Most doctors recognize general toxemia, and perhaps one of the best detoxifying glandular substances is adrenocortin. This may be administered in conjunction with other endocrines according to the age, sex, and general condition of the patient.

(6) In early cases, general blood chemistry may be within the range of recognized normals. Blood cholesterol is usually increased and blood chlorides are usually decreased. Other blood chemistry changes vary as the nutrition of the patient varies and as other organs become involved.

(7) Cancer is not considered contagious; however, all general rules of asepsis should be very carefully observed.

(8) Every cancer case should be observed at intervals of one to three months for a period of at least five years after specific treatment has been given.

(9) I have known many patients who have had radical surgery—technically very skillful—to be dismissed without instructions as to their conduct, diet, and medical care. Needless to say, recurrences are frequent under these circumstances. Either the referring doctor or the specialist should give written instructions to his patient and insist on frequent visits until a definite cure is assured.

All of these factors must be considered at the time the diagnosis is made and carried on during and after specific treatment has been administered.

If the lesion is located in the free part of the sigmoid without adhesions, the entire mass may be resected and an end-to-end anastomosis made as one surgical procedure. If the mass is adherent, it is better to do a sigmoidostomy, and give the following treatment: At the time of the operation inject around the lesion from 20 to 50 cubic centimeters of colloidal gold and complete the sigmoidostomy. Inject from 10 to 20 cubic centimeters of colloidal gold intravenously daily for a week, then use therapeutic x-ray or radium or both.

During these treatments elimination will have been re-established and nutrition improved. The patient, now improved in general physical condition, may be re-operated upon, mass removed, and anastomosis performed. The surgeon and the referring physician must be guided by the patient's condition.

Many of these cases will respond to radium treatment. A small dose of radium protected by a platinum capsule may be inserted into the involved lumen and allowed to remain for several days. No standardized course of procedure will meet the requirements of a large percentage of sufferers. The percentage of fatalities, even in cases where diagnosis has been comparatively early, is very great.

The use of surgery, x-ray, radium, antitoxins and other methods of treating cancer of the sigmoid will not solve the cancer problem. Only preventive methods can prove ultimately satisfactory. The general practitioner should educate his patients in the problems of cancer prevention. Prolonged fatigue, constipation, imbalanced diet, dietetic abuses, and overindulgence in food, tobacco, and liquor should be avoided. Spinal articular lesions should be corrected. This is equally true if we wish to prevent other chronic diseases—arthritis, nephritis, high blood pressure, premature senility, cardiac disease, and others. Only by the closest cooperation between physician and patient will maximum results be achieved.

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Irradiation in Cancer

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It is the purpose of this paper to bring to the general practitioner certain information concerning radiation therapy in the treatment and control of cancer. In a paper of this length and character it is understood that no attempt can be made to refer in detail to any part of the cancer problem, or to relate in any but a small way to that part which irradiation plays today in a worldwide effort to combat and control cancer.

It may be said that early after the discovery of the x-ray and of radium, they became a part of therapeutic medicine, and they have long been employed in the treatment of malignant disease. It will also be noted that with each advancing year new knowledge of their value in this particular field has accrued, until today irradiation has come to be a procedure of recognized value in the treatment of cancer. In fact, of all the many methods and forms of treatment devised, offered, and employed in the treatment of cancer, but two have survived the test of time—surgery and irradiation.

Roentgen rays and radium are used to treat malignant tumors because of the fact that they possess the ability to produce biologic changes in the body tissues. Both forms of radiant energy are destructive in the strictest sense of the word and should always be so regarded. When living cells are exposed to roentgen and radium rays, changes occur which affect both the cell nucleus and the cytoplasm, and if sufficient dosage is given, death of the cell takes place because of complete breakdown of the nuclear elements. The cell likewise becomes swollen and vacuolated and its walls thin and transparent.

It has long been known that cells are most sensitive to irradiation during the period of mitosis or cell division; likewise it is known that the young and juvenile cells are more susceptible to the effects of irradiation than mature or adult cells. Cancer cells are growing cells and can be destroyed by adequate exposure to x-ray and radium, causing arrest in growth, and in some instances even permanent disappearance of the malignant neoplasm. It may also be said that some tumor cells may show marked resistance to the effect of even large doses of irradiation.

The effect of irradiation on cancer is regarded as being twofold: (1) There is a direct lethal effect exerted on the cells of the neoplasm; (2) a secondary effect is brought about in the vascular bed and in the immediate environment of the neoplasm. Damage to the vascular supply to the tumor destroys the nutrition needed for its growth and development. As an end result of such treatment, fibrous tissue forms which many times serves as a restraining medium against further growth of any residual viable cancer cells.

Roentgen rays and radium may be employed singly or in combination, or they may be used in conjunction with surgery. The successful management of any cancer case demands the selection of the proper avenue of therapeutic approach. Each patient represents an individual problem, and if the results hoped for are to be realized, then there must be laid down a sound plan of procedure, with the physician, surgeon, pathologist, and radiologist working in complete harmony. The modern approach to the treatment of cancer is anything but a one-man job. The many complexities of the cancer problem substantiate this statement.

A well-founded diagnosis must always precede treatment. In the management of cancer, treatment is many times dependent upon an accurate pathological report. Whenever possible, biopsy should be performed and the tissue removed placed in the hands of a competent pathologist for microscopic study and appraisal. Biopsy when performed by one skilled in the work, can be done without subjecting the patient to added risk and danger, and will, in the vast majority of instances, serve to establish or rule out the presence of cancer. In addition a fairly accurate estimation of the neoplastic tissue may be obtained and a histologic grading of the tumor made. Such intimate and worth-while knowledge aids materially in planning the treatment to be instituted in the individual case.

Cancer affects many parts of the body and the anatomic location of the tumor influences to no small degree the method of treatment to be employed. Other factors influencing treatment are: the histologic character of the tumor, the presence or absence of metastasis, the extent of the neoplastic involvement, the presence of infection, and last but not least, the general condition and physical status of the patient.

Roentgen therapy is utilized either in the form of filtered or unfiltered radiation, and both high voltage and low voltage irradiation is used in the treatment of cancer. Radium may be employed either in the form of salt or element, or as emanation (radon, gas). Radium element or salt is put up in needles, usually made of platinum (Pt). Emanation, being a short-lived gas, expends all of its radioactive energy in approximately thirty days. Emanation is frequently used in the form of small gold seeds, employed extensively for implantation. Roentgen rays are employed in the treatment of both superficial and deep-seated disease. Radium finds its great use in the management of cavitary neoplasm, where the tumor lends itself to a direct application of the radioactive agent. Dosages used in radiation therapy are mentioned here so that the reader may not be confused if abbreviations are made in that part of the paper to follow. Where roentgen rays are used for therapeutic purposes, dosages are expressed in terms of the international "r unit." Radium dosages are designated as "milligram hours" when the element is used, and as "millicurie hours" when radon is used. The abbreviations of dosage are expressed as "r units" or "r," mg. hours and mc. hours, respectively.

It will not be possible in this paper to give consideration to every type of cancer, nor of cancer in every location of the body. There follows, however, brief reference to irradiation as it may be applied in the treatment of cancer in some of its more common locations.

Cancer of the Skin.—Skin cancer may be divided into two major classes: (1) Basal-cell epithelioma; (2) squamous-cell epithelioma. Both of these forms of skin cancer will yield to radiation therapy and are treated with equal success today by the use of both radium and roentgen rays.

In the writer's experience, unfiltered roentgen rays have proved of great value in the treatment of basal-cell epithelioma. The total dosages administered are rather high, but it should be remembered that recurrence of the lesion is almost sure to occur when treatment is inadequate. Recurrent lesions become less responsive to treatment and with recurrence the therapeutic problem tends to become more difficult. Th epithelioma, when early and small, responds well to unfiltered radiation. The area is well shielded with lead, lead rubber or plastic lead to protect the normal skin and a total dose of from 2000 to 3200 r is delivered in four treatments, given on consecutive or alternate days. The physical factors employed are as follows: 90 to 120 Kv., 5 Ma., 25 cm. distance. In ulcerative lesions irradiation is preceded by endothermic treatment to remove the firm, indurated and elevated margins of the ulcer.

Squamous-cell Epithelioma.—In contradistinction to basal-cell epithelioma, squamous-cell epithelioma shows ability to metastasize and, therefore, attention must be given to the treatment of the regional lymph nodes. Squamous-cell epithelioma is also apt to progress and develop rapidly as compared to the slow, gradually developing basal-cell lesion. Irradiation in the squamous-cell lesion must, therefore, be given along different lines. Unfiltered roentgen rays may be employed, or it may be necessary to use filtered radiation. The total dosage is larger than that given in basal-cell cancer, averaging from 4000 to 6000 r.

It may be expected that rather intense skin reactions may follow treatment, and the skin should be given special care under the direction of the radiologist supervising that treatment.

Care of involved lymph nodes is always a matter of concern. There still is diversity of opinion as to whether or not wide surgical dissection is a worthwhile procedure. Many men believe the affected lymph nodes should be treated by high voltage roentgen rays and any residual nodes taken care of by means of gold seed implants or by surgical removal.

Radium may be used in the treatment of skin lesions, either by means of surface applications or by implantation, using either gold seeds or element needles. The dosage to be delivered to the lesion will depend on its size, but will approximate from 100 to 150 mc. or mg. hours per cc. of tissue.

Cancer of the Lip.—Lip cancer occurs as either a papillary lesion or as an ulcerative, infiltrating process. Early diagnosis and treatment is to be carried out whenever possible, since advanced lip cancer is invariably fatal. The ulcerative form of the disease exhibits marked tendency to invade the regional drainage areas and extension of the lesion to involve the mouth is common.

The roentgen treatment of lip cancer may be carried out along the same lines as that employed in epithelioma of the skin. Heavy doses of unfiltered roentgen rays are effective in the superficial type of lesion, while filtered rays are to be used when invasion of the deeper portions of the lip is present.

Radium may be applied by means of a wax mask, the mask being carefully adjusted to the area under treatment and held in position by tapes or other suitable means of anchorage until the estimated dosage is delivered. The radium tubes are imbedded in the outer surface of the mask and are firmly secured in position by adhesive tape. Radium needles may be implanted about the periphery of the lip lesion and interstitial irradiation carried out. Radium puncture or implantation of this character is a procedure held in high regard by many men. Treatment of the regional neck nodes is followed out routinely, employing external high voltage therapy, radium pack or surgical dissection. If the nodes are subjected to wide surgical dissection, it is advisable to follow this with postoperative roentgen irradiation.

Breast Cancer.—A clinical classification of breast cancer is valuable in that treatment may be followed out along certain lines indicated by the clinical estimation obtained at examination of the patient. A satisfactory classification of breast cancer and one readily adapted to clinical use follows:

Stage I—A tumor which is movable and confined to the breast, not adherent to the skin or underlying structures. There are no palpable axillary nodes.

Stage II—A tumor which has grown into the major part of the breast, attached to the skin with palpable axillary nodes present.

Stage III—A tumor which has invaded most of the breast, invaded the skin and underlying structures, with palpable axillary and supraclavicular nodes Pulmonary and skeletal metastasis.

The treatment of stage I is largely a surgical procedure. Mastectomy in this type of breast cancer will prove adequate in approximately 70 per cent of cases. If irradiation is employed, it is solely as a postoperative measure.

In stage II both preoperative and postoperative irradiation may be employed, there being at the present time considerable emphasis placed on the value and need for preoperative treatment. Following mastectomy, postoperative cycles of roentgen irradiation is a routine postoperative procedure.

In stage III irradiation is to be entirely depended upon in so far as treatment is concerned. In the advanced stages of the disease, treatment is employed chiefly to afford palliation. Roentgen irradiation will be found to be effectual as a rule in relieving the pain almost invariably present where metastasis to the skeletal structures has taken place.

Preoperative irradiation as employed in the treatment of breast cancer consists of delivering to the breast, axilla, and supraclavicular regions, sufficient irradiation to destroy the more superficial cancer cells, to render temporarily inactive those cells in the deeper portions of the tumor, and, as well, to control the lymphatic involvement manifest in the axillary region. By producing these changes, surgical treatment may be carried out with less chance of producing displacement and spread of viable cancer cells into the surrounding tissues, and of inducing circulatory metastasis. At present this form of treatment, which is completed in from two to three weeks to be followed immediately by surgery, or else irradiation using large total doses, is given over a four to six weeks period, with surgery following six to eight weeks after irradiation is completed. In both instances, high volt-

age therapy is directed to the breast through two or more portals, the axilla is treated through two or three portals, while a single supraclavicular field is irradiated. Treatment is administered daily in fractionated dosages.

The postoperative treatment should be started in from ten to fourteen days after mastectomy. At this time the surgical wound should be well organized and no untoward reaction should be forthcoming in so far as the progress of healing in the surgical field is concerned. In the postoperative treatment radiation therapy is directed to the thoracic wall, axilla, and supraclavicular regions for the purpose of destroying or sterilizing malignant tissue remaining after surgical removal of the breast and axillary contents. In carrying out treatment, low or moderate voltage roentgen rays are directed tangentially to the thoracic wall and the field of operation. The axilla and supraclavicular regions are treated by high voltage irradiation. The patient is seen daily for treatment, two portals being irradiated at each sitting, employing 150 to 200 r to the port. The total dosage for each portal will range from 1000 to 1800 r. It is common practice to administer three or more postoperative cycles, particularly if preoperative treatment has not been administered. The second and third cycles are given at intervals of two to three months, the condition of the skin permitting of further treatment.

Roentgen Sterilization.—Of late the relationship between the ovarian and breast structures has been emphasized. It has been pointed out, and the fact well established, that folliculin from the ovaries affects the ductal tissue of the breast during the menstrual cycle, producing marked proliferation of the duct cells and multiplication of the acini. The normal cells, and as well, cancer cells when present, are affected. Breast cancer in the young woman will invariably be found to be influenced by menstruation and also by pregnancy and lactation. Because of this, it is now generally agreed that all women having breast cancer and in particular those who have not passed through the menopause, should subject themselves to roentgen sterilization. The writer has upon repeated occasions been able effectively to control metastasis to the bony skeleton by using this procedure. Good results may be expected in about 50 per cent of all cases so treated.

Skeletal metastasis and the pain usually accompanying such involvement may be controlled in many cases by irradiating the spine and pelvis. At present we are directing treatment to the paravertebral regions and have found this procedure effective. Vertebral and pelvic irradiation will relieve pain in about 80 per cent of cases.

Uterine Cancer.—In the modern treatment of uterine cancer, radiation therapy finds a useful place and this applies to both corpus cancer and the more common cervix lesion.

There is considerable confusion at the present time relative to the management of cancer involving the uterine cervix, particularly as to which types of cases are amenable to surgical treatment and which cases should be treated by irradiation.

Again it may be found helpful to have available a clinical classification for reference and guidance. The classification given here is one dividing carcinoma of the cervix into the following stages:

I. Disease limited to the cervix. Uterus mobile.

II. Ulcer or tumor of cervix with extension into the fornices. Uterus partially mobile.

III. Tumor or ulcer of the cervix with involvement of the parametria, the regional lymph nodes or both. Uterus fixed.

IV. *(a)* Massive involvement of parametria, the regional lymph nodes or both. Uterus fixed. *(b)* Involvement of vagina, rectum or bladder. *(c)* Distant metastasis.

It is a well-established fact that surgery, if employed at all, will be successful in only those lesions falling into clinical stage I. Authorities have come to depend more and more on irradiation in all stages of cervical cancer.

The treatment of cervix cancer requires hospitalization of the patient. Upon admission, a thorough and careful examination of the pelvis is made, the presence of any infection in the cervix or parametria is noted, and the extent of the malignant process estimated. At this time biopsy is secured. In questionable lesions diagnosis through the medium of biopsy and microscopic study is always indicated. The securing of biopsy may be made most safely and easily by employing the Schiller test, taking the tissue from the unstained mucosal area. Preliminary to irradiation or surgery, the patient's general health is determined, blood transfusions are given when necessary, treatment is given to clear the pelvis of any infection, and attention is directed to bring to maximum efficiency the eliminative action both of the colon and of the urinary tract.

Radium treatment being contraindicated in the presence of pelvic infection, high voltage roentgen therapy is best employed first. Treatment is directed to the pelvis through two anterior and two posterior fields, small doses being given daily until a total of 1200 to 2000 r has been delivered to each skin field. This will tend to reduce the pelvic infection, reduce the size of the growth, and control bleeding, and will exert a controlling influence on the parametrial tissues and pelvic lymph structures.

When x-ray therapy is completed, radium treatment is carried out immediately. Radium is placed in the uterine cavity by means of a platinum applicator or sound. Suitable applicators containing properly filtered radium are placed against the cervix and in the lateral fornices of the vagina, being held in position by gauze packing. The predetermined radium dosage will be influenced by the stage and character of the disease and will, therefore, vary, ranging from 5000 to 8000 mg. hours.

In the far-advanced, stage IV, lesion it is unlikely that any form of treatment is indicated, with the exception perhaps of judiciously administered high voltage x-ray.

Following completion of radium treatment, the patient is kept in the hospital for several days to guard against any untoward circumstances which might require immediate care and attention.

Additional x-ray treatment may be indicated and given in some cases, if the condition and general health of the patient permit. Such treatment may be instituted six to ten weeks after completion of the radium therapy.

Uterine Corpus Cancer.—Cancer of the corpus as generally treated today calls for preoperative irradiation followed by hysterectomy, unless the pelvic involvement is too great or the disease has become metastatic in nature, in which case irradiation alone is employed.

The positive diagnosis of corpus cancer many times entails the necessity for curettage, which constitutes biopsy. Many men consider curettage to be dangerous in that the trauma occurring with such procedure tends to spread the malignant process. However, there are others who employ curettage, feeling that it is necessary for accurate diagnosis. Certain advantages may be realized if curettage carefully performed and completed is followed immediately by the intrauterine application of radium. The radium is left in place until microscopic diagnosis is made by the pathologist. If cancer is not present, the radium is removed, and when cancer is found to exist, treatment already will have been undertaken.

When corpus cancer is to be treated surgically, preoperative irradiation is given, with high voltage x-rays and radium, used in combination. The high voltage therapy is administered to the pelvis in much the same manner as in the case of cervix carcinoma, following which intrauterine radium therapy is instituted. The radium is left in place until a dosage of 3000 to 5000 mg. hours is given. Surgery is performed two to three weeks after irradiation, and is followed by postoperative roentgen therapy directed to the pelvis.

In advanced cases where involvement of the bladder or rectum is present, treatment is given entirely by means of high voltage irradiation.

CONCLUSION

Cancer of the skin, lip, breast, and uterus have been referred to and briefly dealt with in this paper inasmuch as they are not only exceedingly common, but are as well conditions which afford the writer opportunity to attempt to explain the use of roentgen rays and radium in the treatment of both superficial and deep-seated cancer.

In addition to the conditions referred to above, irradiation is employed in the treatment of cancer involving the mouth, tonsil, larynx, lung, kidney, bladder, prostate, rectum and in some of the inoperable gastric lesions. Cancer in some of these locations can be arrested and even cured by irradiation alone, in others by surgery alone, and still in others by employing surgery in conjunction with irradiation. The success attendant upon each method is influenced by the extent and character of the cancer and probably to the greatest degree by the period of time existing between the discovery of the disease and the institution of treatment. The earlier the diagnosis and treatment, the greater the chance for arrest and cure.

Philadelphia Osteopathic Hospital, 48th and Spruce Sts.

Group cooperation and consultation is as important for proper treatment as it is for diagnosis. The rapid development of the technical equipment, together with improved and more refined methods of application by radium and x-rays, will inevitably result in increasing the cancer cures, decreasing the morbidity, and diminishing the volume of surgery on cancer patients.—Frank E. Adair, M.D., from "The Attitude of the Modern Surgeon Toward the Cancer Problem."

Historical Resumé Osteopathic Hospitals

H. C. WALLACE, D.O.
President Associated Hospitals of Osteopathy
Wichita, Kansas

The first college of osteopathy was chartered " . . . to improve our systems of surgery, midwifery, and treatment of general diseases. . . " Dr. Still and his early disciples never intended to discard the accumulated knowledge of the healing art and related sciences, but rather to supplement such knowledge and reapply it in relation to the new concepts of the osteopathic school. Naturally the first few years were occupied chiefly in the treatment of chronic diseases. With success in the treatment of such cases, many of which had been pronounced hopeless by the "old school," there was an increasing demand for the care of acute ailments, also for the care of obstetrical and surgical cases.

Hospital care, therefore, became necessary for an increasing number of cases handled by osteopathic physicians and surgeons. There were few hospitals of any kind in the early days of the osteopathic profession and difficulty was often encountered when the D.O. sought admission to treat his patients in such hospitals as then existed. With the coming of systems of rating hospitals by the American Medical Association and the American College of Surgeons, these difficulties increased, and it became apparent that osteopathic physicians must have their own institutions for the care of their patients needing such services.

This has been, and still is, a serious problem with the osteopathic profession. In the beginning we had few physicians who were at all familiar with hospital problems. Many of the osteopathic hospitals established have been failures, not a few of which were sizable institutions. Some have failed because of unsound financial plans, some because of poor staff organizations, and some because of the failure of the profession in the localities to appreciate the value of the hospitals, with consequent inadequate support morally, professionally, and financially.

A maternity home was established by Dr. A. T. Still in Kirksville, Mo., in 1895. The first general osteopathic hospital was established at Kirksville in 1898 and existed until about 1902. Dr. J. B. Littlejohn was surgeon, but minor surgery and accident cases made up the bulk of the surgical work in this institution at this time.

A new hospital was built by the American School of Osteopathy in 1905, and opened its doors in 1906. It is the oldest osteopathic hospital now in operation. A training school for nurses was organized at this hospital the same year and was accredited by the Missouri State Nursing Board. This is the oldest accredited osteopathic nurses' training school.

The Des Moines General Hospital at Des Moines, Iowa, was established in 1909.

The osteopathic hospital of Philadelphia was established May 10, 1911, by Dr. O. J. Snyder. A

training school for nurses was established in 1915 and accredited by the Pennsylvania Nursing Board in 1931.

The Southwestern Osteopathic Hospital was opened May 12, 1912, in Blackwell, Oklahoma. A training school for nurses was organized in 1915 and accredited in 1917 by the Oklahoma Nurses' Examining Board. This institution was moved to Wichita, Kansas, in 1924.

The Bashline-Rossman Osteopathic Hospital at Grove City, Pa., was established in 1914 by Dr. O. O. Bashline. It has an accredited nurses' training school in connection with it.

The Still-Hildreth Osteopathic Sanatorium was established at Macon, Mo., in 1914 by Drs. A. G. Hildreth, C. E. Still and H. M. Still. This was the first osteopathic institution for the treatment of mental and nervous diseases.

The Chicago Osteopathic Hospital was established by the Chicago College of Osteopathy in 1918. Preceding this the Littlejohn Hospital was operated in Chicago for several years.

The Laughlin Hospital was established in 1918 by Dr. George M. Laughlin and opened September 1, 1919. A nurses' training school was established and accredited the same year.

So far as I am able to ascertain, the five training schools for nurses mentioned are the only accredited training schools in the osteopathic profession. If there are others, the secretary of the Associated Hospitals of Osteopathy would be glad to have that information.

The Detroit Osteopathic Hospital was established with the help of Mr. Phillip H. Gray, a Detroit philanthropist, in 1919, and opened to the public, January 28, 1920.

States having the largest number of osteopathic hospitals according to available information are California 16, Missouri 11, Michigan and Kansas each 8, Pennsylvania and Texas each 6.

The American Osteopathic Hospital Association was established about 1921 or 1922. We have been unable to obtain definite data regarding much of the early activities of that organization. In 1923 a large and enthusiastic meeting was held in New York City in connection with the American Osteopathic Association convention. The American College of Osteopathic Surgeons was organized in 1926. The number of individuals interested in each of these organizations was small and the personnel composed largely of the same persons. It was difficult to hold satisfactory meetings of each group separately.

In 1928 a special joint meeting of the American Osteopathic Hospital Association and the American College of Osteopathic Surgeons was held in Wichita, Kans., at which time the hospital association was disbanded and its activities continued as a committee in connection with the College of Surgeons.

With the increase in the number of members of the profession interested in hospitals, a new organization was established under the name of The Associated Hospitals of Osteopathy at the American Osteopathic Association convention in 1934, also held at Wichita, Kans. The annual meeting has been held each year since that time in connection with the national Association convention and a great deal of constructive work has been done.

This organization recognizes the obligation of the hospitals to the osteopathic profession to provide properly trained personnel in these institutions, as well as first class equipment and management in order that superior service may be rendered. We believe that as a rule our osteopathic hospitals are rendering as good as, if not better service, than other hospitals in their immediate vicinities, and because of their osteopathically trained staffs are accomplishing results which cannot be equalled by other hospitals.

The problems of our hospitals are not the result of competition from other hospitals or the opposition of the allopathic profession, but are the result chiefly of the lack of interest and support by our own profession. We cannot make our institutions grow in size or increase in number by continuing to allow probably 80 per cent of hospital patients of osteopathic physicians to be cared for in allopathic hospitals, nor can we continue as an independent system of practice without support given to our hospitals. A good osteopathic hospital always develops a strong osteopathic community and there are very few strong osteopathic communities which do not have access to an osteopathic institution.

With the development of our osteopathic hospitals and with changes in the laws in several states requiring intern training, the need for standardization of our hospitals became evident. The American College of Osteopathic Surgeons working in connection with the Bureau of Hospitals of the American Osteopathic Association developed a plan for standardization which was adopted by the College at its Los Angeles meeting in 1931 and by the American Osteopathic Association at the Seattle convention the same year. Credit for this very excellent piece of work goes chiefly to Dr. Orel F. Martin of Boston, then secretary of the College, who was author of the original plan, and to Dr. E. O. Holden of Philadelphia, at that time chairman of the Bureau of Hospitals of the American Osteopathic Association.

The Associated Hospitals of Osteopathy is doing much to promote the interests of our osteopathic institutions and to help solve their common problems. Most of the larger institutions are affiliated with the organization. During the American Osteopathic Association annual convention to be held in Cincinnati, July 11 to 15, the Associated Hospitals of Osteopathy will hold the most important meeting in its history. Much constructive work will be accomplished in the interests of our osteopathic hospitals.

Appended is a list of osteopathic institutions which have been reported to the Associated Hospitals of Osteopathy:

OSTEOPATHIC INSTITUTIONS REPORTED TO THE ASSOCIATED HOSPITALS OF OSTEOPATHY

Arkansas

Dr. Dodson's Health Home—Little Rock.

California

Alvarado Hospital, Los Angeles.
Arbuckle Sanitarium, Arbuckle.
Bondies Sanitarium, S. Pasadena.
Byrne Hospital, Lancaster.
Doctors Hospital, Los Angeles.
Kushner San. and Rest Home, Oakland.
Los Angeles County Osteopathic Hospital, Los Angeles.
Magnolia Hospital, Long Beach.
Merrill Neuropsychiatric Sanitarium, Venice.
Monte Sano Hospital and Sanitarium, Los Angeles.
Mother Lode Hospital, Jamestown.
Riverside Osteopathic Hospital and San., Riverside.
Santa Ana Valley Hospital, Santa Ana.
Vanosse Hospital, Stockton.
Verdugo Hills Sanitarium, Tujunga.
Wilshire Hospital, Los Angeles.

Colorado

Lamb Hospital, Denver.
Osteopathic Health Institute, Denver.
Rocky Mountain Osteopathic Hospital, Denver.

Florida

Howell Sanitarium, Inc., Orlando.
Mount Dora Hospital, Mount Dora.

Illinois

Chicago Osteopathic Hospital, Chicago.
Fuller and Sours Osteopathic Hospital, Bloomington.
Ottawa General Hospital, Ottawa.

Indiana

Crain Sanitarium, Richmond.
Decker Hospital, Goshen.

Iowa

Bishop Osteopathic Hospital, Rock Rapids.
Des Moines General Hospital, Des Moines.
General Hospital of Algona, Algona.

Kansas

Blue Rapids Hospital, Blue Rapids.
Bush Hospital, Harper.
Eoff Institute, Ottawa.
Gleason Hospital, Inc., Larned.
Leopold Hospital, Garden City.
Orton Hospital, Hoisington.
Southwestern Osteopathic Sanitarium and Hospital, Wichita.
Stees Hospital, Marion.

Massachusetts

Massachusetts Osteopathic Hospital, Boston.
Restcroft Sanitarium and Hospital, Rockport.

Michigan

Battle Creek Osteopathic Hospital, Battle Creek.
Benson Clinic, St. Johns.
Carson City General Hospital, Carson City.
Detroit Osteopathic Hospital, Detroit.
Dr. Lustig's Sanitarium, Grand Rapids.
Morgan Maternity Home and Hospital, Nashville.
Still Osteopathic Hospital, Flint.
Straits Hospital, St. Ignace.

Missouri

A.S.O. Hospital, Kirksville.
Lakeside Hospital, Kansas City.
Laughlin Hospital, Kirksville.
Mercy Hospital Sanitarium, St. Joseph.
Mitchell Clinic-Sanitarium, Excelsior Springs.
Northeast Hospital, Kansas City.
Ozark Osteopathic Hospital, Springfield.
Pauly Hospital, Kahoka.
Reid Hospital and Clinic, Bethany.
Still-Hildreth Osteopathic Sanatorium, Macon.
Stone Memorial Hospital, Carthage.

Nebraska

Anton Kani Hospital, Omaha.
Edmund-Hansen Hospital, Fairbury.
Fenner Hospital, North Platte.
Salmen Hospital and Clinic, Tecumseh.
Widney Hospital, Lexington.

New Jersey

House of Finnerty, Montclair.

New Mexico

Donovan Osteopathic Hospital, Raton.

New York

Brooklawn Osteopathic Sanatorium, Syracuse.

North Dakota

Fargo Sanitarium, Fargo.

Ohio

Cleveland Osteopathic Hospital, Cleveland.
Dayton Osteopathic Hospital, Dayton.
Dr. LaRue's Osteopathic Eye, Ear, Nose and Throat Hospital, Columbus.
Marietta Osteopathic Hospital and Clinic, Inc., Marietta.
Wilson Osteopathic Hospital, Lakewood.

Oklahoma

Hugo Clinic, Hugo.
The Montague Clinic, Muskogee.
Tulsa Osteopathic Hospital, Tulsa.
Wetmunka Osteopathic Hospital, Wetmunka.

Oregon

Albany Clinical Group, Albany.
Dr. C. T. Smith Hospital, Hillsboro.

Pennsylvania

Baker Hospital, Lancaster.
Bashline-Rossman Osteopathic Hospital, Grove City.
Dufur Hospital, Ambler.
Fuller Osteopathic Hospital, Willow Grove.
Gedney Osteopathic Hospital, Philadelphia.
Osteopathic Hospital of Philadelphia, Philadelphia.

Rhode Island

Rhode Island Osteopathic Hospital, Providence.

Tennessee

"Glyndon Terrace," Yowell's Osteopathic Rest Cure Sanitarium, Chattanooga.

Texas

Amarillo General Hospital, Amarillo.
Bailey Osteopathic Hospital, Houston.
Gorrell General Hospital, Corpus Christi.
McAllister Hospital, Houston.
Peterson Osteopathic Hospital, Marfa.
Sparks Clinic and Hospital, Dallas.

Washington

Waldo General Hospital, Seattle.

Public Relations Committee

CHESTER D. SWOPE
Chairman
Washington, D. C.

THE BURKE-DREW AMENDMENT

The Burke-Drew Amendment (Public Law 558, 75th Congress) amends the United States Employees' Compensation Act of 1916, as amended. Anticipating the inquiries which are inevitable when this new law favoring osteopathy becomes better known among osteopathic physicians, the Public Relations Committee worked out a series of answers to questions which will probably be most commonly asked. They are given as follows:

Question: What is the United States Employees' Compensation Act?

Answer: It is a law, enacted in 1916, creating the U. S. Employees' Compensation Commission and directing that Commission to furnish medical and hospital services and supplies to civil employees of the federal government who become injured in the course of their employment or contract illness as a direct result of it.

Question: What medical and hospital services and supplies has the Commission been furnishing?

Answer: (1) The services and supplies of government facilities (government medical officers and hospitals) wherever available. (2) The services and supplies of M.D.'s in private practice and of hospitals conducted by private M.D.'s, wherever government facilities are not available.

Question: How has the Commission gone about furnishing the services of private M.D.'s and private M.D. hospitals?

Answer: It has designated some 3,000 M.D.'s and a number of M.D. hospitals located in government employee centers of population, and it has instructed all government employee foremen and other superiors to send any injured employee to these designated physicians and hospitals.

Question: If the employee refuses to go to the M.D. or M.D. hospital designated by the Commission, will the Commission pay for the services or supplies he receives from any other M.D. or M.D. hospital that he might choose to go to?

Answer: No.

Question: Is the Commission authorized to designate D.O. physicians and D.O. hospitals?

Answer: Yes. The Burke-Drew Amendment (Public Law 558, approved May 31, 1938) authorizes the Commission to furnish services and supplies rendered or recommended by osteopathic physicians and osteopathic hospitals.

SECTION 9, UNITED STATES EMPLOYEES' COMPENSATION ACT
(As Amended by Act of June 26, 1926)

That for any injury sustained by an employee while in the performance of duty, whether or not disability has arisen, the United States shall furnish to the employee all services, appliances, and supplies prescribed or recommended by duly qualified physicians which, in the opinion of the commission, are likely to cure or to give relief or to reduce the degree or the period of disability or to aid in lessening the amount of the monthly compensation. Such services, appliances, and supplies shall be furnished by or upon the order of United States medical officers and hospitals, but where this is not practicable they shall be furnished by or upon the order of private physicians and hospitals designated or approved by the Commission. For the securing of such services, appliances, and supplies, the employee may be furnished transportation, and may be paid all expenses incident to the securing of such services, appliances, and supplies, which, in the opinion of the commission, are necessary and reasonable.

SECTION 40, UNITED STATES EMPLOYEES' COMPENSATION ACT
(As Amended by Act of May 31, 1938, namely, the Burke-Drew Amendment)

That wherever used in this Act . . . the term "physician" includes surgeons and osteopathic practitioners within the scope of their practice as defined by State law.

The term "medical, surgical, and hospital services and supplies" includes services and supplies by osteopathic practitioners and hospitals within the scope of their practice as defined by State law.

Question: If the employee refuses to go to the D.O. or D.O. hospital designated by the Commission, will the Commission pay for the services and supplies he receives from any other D.O. or D.O. hospital that he might choose to go to?

Answer: No.

Question: If there is a designated M.D. available, but no designated D.O. available, may the foreman send his employee to an osteopathic physician for treatment at government expense?

Answer: Yes.

Question: When a government employee goes to an osteopathic physician, how may that physician know that his treatment will be paid for by the Commission?

Answer: The employee will present an authorization form from his foreman or other superior naming the physician and requesting treatment. There are two kinds of request forms, namely, C.A. 16 and C.A. 17. C.A. 16 requests treatment. C.A. 17 may merely involve an examination as it is used in cases where there is doubt as to whether the injury arose in the course of employment, or it may involve treatment as well as examination, since the request reads:

> "You are requested to examine the case and advise this office whether in your opinion the disability is due to the alleged injury. If there seems reason to believe the disability may be due to injury alleged, treatment should be rendered as provided by paragraph 88 of the Compensation Commission's Regulations until it can be definitely ascertained whether the case is one for which treatment should be continued under said regulations and the Compensation Act.

Also, in cases requiring emergency treatment, payment is authorized. *The Basic Act Grants the Commission the Right of Final Approval in All Cases, Whether Treatment is Rendered by M.D.'s or D.O.'s.*

Department of Public Affairs

A. G. CHAPPELL
Chairman
Jacksonville, Fla.

LEGAL AND LEGISLATIVE

WALTER E. BAILEY
St. Louis
Legislative Adviser in State Affairs

RENEW FEDERAL NARCOTIC PERMITS

Osteopathic physicians who hold Federal narcotic permits are reminded that the permits must be renewed every year before July 1. Failure to do so entails severe penalties.

RE-REGISTRATION OF OSTEOPATHIC LICENSES

July 1—Idaho, $2.00. Address Commissioner of Law Enforcement, State House, Boise.

—Kansas, $5.00. Address Dr. J. E. Freeland, secretary, 21 Columbia Bldg., Coffeyville.

—Michigan, $1.00. Address Dr. Claude B. Root, secretary-treasurer, Greenville.

Kansas

SUPREME COURT OPINION RENDERED IN GLEASON CASE

The Supreme Court of Kansas rendered an incomplete opinion on June 11, in the original action in quo warranto by which the Attorney General seeks to oust Dr. B. L. Gleason, Larned, from practicing drug therapy and operative surgery (Jour. A.O.A., Oct., 1937, p.73; Nov., 1937, p.105; May, 1938, p.420). Defendant moved for a determination of questions of law in advance of the trial of facts, and this opinion of the court goes no further than that.

The court, in this opinion, reviews the laws from year to year, governing the practice of medicine and surgery, and of osteopathy, culminating in the osteopathic practice act of 1913. Its opinion is that when the law specifies that osteopathy may be practiced as taught and practiced in osteopathic colleges of good repute, it means as taught in 1913, and that when osteopathic colleges in 1913 taught surgery, that word did not mean the same as when applied in other colleges of medicine, because "surgery in its primitive and broadest sense included adjustment of bones, muscles, ligaments and nerves by manual operation, and . . . skill in doing so is taught in osteopathic . . . colleges, and occupies a major place in the science . . . of osteopathy."

Since this opinion deals only with questions of law, and not of fact, it will not be operative to stop Dr. Gleason's practice. Futher court action, dealing with questions of fact, will be necessary to bring that about.

The pleadings in the case are complicated, and the full import of the opinion cannot yet be known, inasmuch as the court refused to reply to certain of the questions propounded by the defendant.

There is under consideration the filing of a motion for a rehearing on the questions of law.

COMMITTEE ON VOCATIONAL GUIDANCE

MARY L. HEIST
Chairman
Kitchener, Ont.

We are publishing in condensed form the reports of two osteopathic physicians who have been concentrating on two different phases of vocational guidance work. These reports are very interesting and show what can be done if one has the courage to try. The chairman would appreciate hearing from others who are engaged in any kind of vocational guidance activity.

M. L. H.

VOCATIONAL GUIDANCE CONFERENCE

On March 10 and 11, 1938, a vocational guidance conference was held at Michigan State College in Lansing. Through the efforts of Dr. Ethel Cook Carpenter, a representative of osteopathic schools was placed on the program. Dr. J. S. Denslow, of the Chicago College of Osteopathy and Secretary of the Associated Colleges of Osteopathy, spoke on "Osteopathy as a Vocation." This is the first time osteopathy has been granted a place on the Vocational Guidance Conference program of this state college. We congratulate the Lansing osteopathic physicians and trust that this is only the beginning.

On Friday evening the osteopathic physicians of Lansing arranged a dinner in honor of Dr. Denslow. This was followed by a meeting at 8:00 o'clock to which the public was invited. Dr. Lawrence Jarret, Lansing, presided. Mr. Lester Whetten, Dean of the Chicago College of Osteopathy, spoke briefly, mentioning various Lansing students enrolled in the Chicago college.

Wide and favorable publicity was given osteopathy by the Lansing newspapers.

GRADUATE PLACEMENT

Five years ago Texas osteopathic physicians realized the need of more physicians in Texas. Dr. Marille E. Sparks visited two osteopathic colleges as official representative of the Texas Osteopathic Association. She interviewed students of the upper classes, and as years passed her time was taken up whenever she was known to be in town, the students manifesting much interest. Her talks included: "How to Choose a Location," "How to Build a Practice," "Your Duties to Your Profession," "Professional Ethics," "Osteopathic Organizations," concluding by a talk on Texas and its advantages.

Many graduates chose Texas and were helped in selecting a location. They are largely responsible for the fact that Texas leads the nation in increased A.O.A. membership this year.

The osteopathic members of the State Board have been very cordial in their relations to students taking the examinations. They inaugurated the practice of giving a dinner for all osteopathic graduates appearing before the Board. Osteopathic physicians practicing in the town in which the examinations are held attend this dinner also. The new graduates locating in Texas are made to feel welcome and from the beginning realize that they are obligated to organized osteopathy because members in the field give them friendly advice and encourage them as much as possible. The successful placement of graduates results in an increase in the number of students who want to take up osteopathy. Placement is a very essential part of student recruiting.

COMMITTEE ON SPECIAL MEMBERSHIP EFFORT

F. A. GORDON
Chairman
Marshalltown, Iowa

MEMBERSHIP STATUS

With enactment of the Burke-Drew bill as Federal law comes an excellent opportunity for a joint membership campaign in all divisional societies. Whatever the scope of the new regulations to be promulgated under this law by the U. S. Employees' Compensation Commission, the actual benefit to the profession from the mere fact of this expression of confidence without a dissenting voice in Congress cannot be measured.

The moment the exact nature of the benefits to come is known, the officers of divisional societies must be ready to spread the word to all their members. Otherwise it may take years for it to be applied in some sections.

A well planned project can be developed whereby special society service letters will be sent to addresses supplied by those who are members in good standing in both A.O.A. and state societies. The State membership chairman, by notifying all non-members of this project and its advantages, can so develop the organization as to secure more than enough new state members to cover total costs.

If the Commission promulgates rules of the type expected, such special society service letters should go to carefully selected lists of postmasters, officers of C.C.C. camps, superintendents of W.P.A. projects, relief officers, and individual employees in all these groups. There is evidence to prove that such people involved in most communities appreciate having matters of this nature brought to their attention through authentic channels not locally involved. Some interesting accomplishments of the Iowa Society of Osteopathic Physicians and Surgeons, Inc., in a statewide public educational project were told in The Forum for November, 1937. The Chairman of this Committee will be glad to give more details to any one interested in this work.

HONOR ROLL

To the long list of those who have secured, since August 1, applications and dues payments, we add this month the names of E. A. Ward of Michigan; Walter E. Bailey and Herman Shablin of Missouri; S. C. Edmiston of California; J. R. Alexander of Texas; H. E. Friberg of Maine; G. C. Jones of Georgia; Margaret Manchester of Rhode Island; D. F. Johnson, R. P. Westfall and F. A. Gordon of Iowa.

The total membership on June 1 was 334 in excess of our total number on that date last year.

Last Call to the Convention

Cincinnati, July 11 to 15

LATE NEWS BULLETINS

Everything is in readiness at Cincinnati for one of the finest conventions in the history of the A.O.A. If you thought that you would not come, you had better change your mind, because you will not want to miss the good things that will be presented there.

THE JOURNAL for June contained the official program and other information. Some news items not received before that JOURNAL went to press are included here:

Kiwanis Club regular Monday luncheon meeting (July 11) will be addressed by Dr. A. D. Becker, President of the Des Moines Still College of Osteopathy. All osteopathic Kiwanians are urged to attend.

Alumni Foundation of the Kansas City College of Osteopathy and Surgery will hold a luncheon meeting, Tuesday, July 12, in Room B of the Netherland Plaza Hotel.

Soroptimist Club members will meet for breakfast, Tuesday, July 12, at the Netherland Plaza Hotel. Watch the bulletin board for room assignment.

Women who belong to osteopathic auxiliaries will also meet for breakfast, Tuesday, July 12.

Golf Tournament—over twenty valuable prizes have been provided for the tournament to be held at the Hyde Park Golf and Country Club on Thursday afternoon, July 14. These prizes have been donated by various commercial exhibitors who have taken space at the convention.

The following is a list of those who have returned A.O.A. memberships in multiples of five.

A = 5 A.O.A. Memberships

Alexander, J. R. (Tex.) AA
Bartosh, Wm. (Calif.) A
Bugbee, William C. (N.J.) AAA
Button, J. C. (N.J.) A
Conley, Geo. J. (Mo.) AA
Goorley, Lois (N.J.) A
Gordon, F. A. (Ia.) (14 A's)
Hannan, D. E. (Ia.) AA
Jones, Margaret (Mo.) AAA
Jones, J. L. (Mo.) A
MacCracken, F. E. (Calif.) A
Riley, Geo. W. (N.Y.) AA
Shablin, Herman (Mo.) AAA
Ward, E. A. (Mich.) AAA

State Honors

Net Gain Since August 1			Percentage of Profession Members	
Texas	26.95	GROUP A	New Jersey	82.62
Florida	6.86	GROUP B	Wisconsin	74.79
Idaho	13.04	GROUP C	N. Carolina	78.43
Utah	50.00	GROUP D	Hawaii and New Brunswick	100.00

MEMBERSHIP GAIN SINCE AUGUST 1, 1937

Analysis of the net gain as of June 1 shows 26 divisional societies registered net A.O.A. membership gains sufficient to offset losses in 24 other divisional societies, and to advance the total membership figure 3.02 per cent above the mark of August 1, 1937. Eight societies maintained a par status.

GROUP A
(Societies of more than 200)

	Percent of gain on June 1, 1938
Texas	26.95
California	14.28
Missouri	8.96
Oklahoma	6.14
Michigan	4.85
Iowa	3.88
New Jersey	3.84
Kansas	2.48
Ohio	1.98
New York	1.60
Pennsylvania	.52

GROUP B
(Societies of 100—199)

	Percent of gain on June 1, 1938
Florida	6.86
Colorado	3.40
Washington	1.47

GROUP C
(Societies of 50—99)

	Percent of gain on June 1, 1938
Idaho	13.04
South Dakota	6.56
Georgia	5.88
North Carolina	5.26

GROUP D
(Societies of less than 50)

	Percent of gain on June 1, 1938
Utah	50.00
Quebec	40.00
Wyoming	33.33
Alabama	25.00
Hawaii	25.00
Nevada	25.00
Mississippi	16.66
Vermont	7.14

Par membership obtained in Ontario, Connecticut, Kentucky, New Hampshire, Arizona, South Carolina, Alberta and New Brunswick.

Don't Miss It!

OSTEOPATHY ON THE AIR

Dr. Edward A. Ward, President of the American Osteopathic Association, will speak Monday, July 11, at 2:30 p. m. E. S. T., over the Columbia Broadcasting System from the studios of WKRC, Cincinnati, in connection with the national convention. He will also be interviewed, together with Dr. Arthur E. Allen, President-Elect, over the National Broadcasting Company network, the exact time not available as this JOURNAL goes to press. In addition, Congressman Ira Walton Drew, Drs. Ward, R. C. McCaughan, and Grace R. McMains will participate in a symposium "What's Ahead in Medicine" over WLW. Other osteopathic physicians attending the A.O.A. and related conventions will present fifteen minute programs daily for eleven days over WCKY. Radio stations WKRC and WSAI have also requested programs. The weekly radio program schedule may be found on page 558.

An Invitation to Texas

The Texas Association of Osteopathic Physicians and Surgeons invites you to Dallas for the National convention next year (1939).

Dallas is well-trained and well-equipped to handle large conventions, for example, the American Medical Association, American Dental Association, American Hospital Association, and International Rotary. All of these organizations have met with us.

Texas has many things of interest. Of course it has seedless oranges and grapefruits, but it also has plains covered with cattle and mountains covered with goats. It produces more oil than any two other states in the Union. Cotton is still king, but surprisingly Texas is third in the production of corn and wheat. While Texas has miles and miles of plains and mountains, it has a coast with thirteen ports and sea breezes which are plentiful.

The "eyes of Texas" have been upon the A.O.A. convention for some time and now the Texas Association of Osteopathic Physicians and Surgeons asks for the chance to show A.O.A. members what they have to offer.

Dallas is a clean, healthy city of 400,000 population. It is reached easily by all methods of travel. During the 1936 Centennial and the 1937 Exposition, Dallas entertained more than four million persons. Most of them came by automobile.

The location of Dallas, a little South of the center of osteopathic population, will draw a big attendance of osteopathic physicians and the usual number of exhibitors.

When you come to Texas, you need not worry about the heat. The only way Texas people realize that sunshine may be fatal is when they read about sunstroke occurring in Eastern and Northern cities. Texas is prepared for hot weather just as people who live in the North are prepared for ice and snow. In Dallas you need not walk several blocks to an auditorium, for we have adequate space in two hotels, fifty feet apart, for everything. Air-conditioned rooms are as plentiful in Texas as overcoats in New England.

Texas has seven osteopathic hospitals. Clinical material is abundant. All physicians in Texas, osteopathic and others, hold identical licenses and have the same privileges.

Texas has never had a convention. Texas wants the 1939 convention. It has to offer in return a new country which many in the profession have never seen. Texas has a bright future for the development of osteopathy. Osteopathic physicians do well in Texas. May we count on your support when the Convention City for 1939 is being chosen?

LOUIS H. LOGAN, D.O., Chairman
Invitation Committee

J. W. MCPHERSON, Secretary
Texas Association of Osteopathic Physicians and Surgeons

ADVANCED MEMBERSHIP HONOR ROLL

(Continued from p. 525)

English, E. E., Denver, Colo.
Eschliman, John C., Youngstown, Ohio
Esterline, C. M., Kirksville, Mo.
Esterline, E. S., Kirksville, Mo.
Evans, G. Irving, Hull, England
Failing, Dorothea, Oxford, Mich.
Fellhauer, Lou Etta, Excelsior Springs, Mo.
Ferguson, E. Gertrude, Neosho, Mo.
Fischer, Carl, Woodbury, N. J.
Fish, Arthur R., Flushing, L. I., N. Y.
Fiske, Franklin, New York, N. Y.
Flack, Arthur M., Jr., Philadelphia, Pa.
Foley, H. P., San Diego, Calif.
Ford, D. C., Lucas, Kans.
Ford, Mellie B., Kansas City, Mo.
Foreman, Oliver C., Chicago, Ill.
Fossler, Van H., Princeton, Ill.
Fox, Mildred, Mt. Holly, N. J.
Francis, Stewart I., New York, N. Y.
Francis, T. Harris, Lancaster, Pa.
Frankowsky, E., Chicago, Ill.
Fuller, A. H., Shepherd, Mich.
Funk, Guy T., Winston-Salem, N.C.
Funk, Thomas M., Mooresville, N. C.
Furey, Charles A., Philadelphia, Pa.
Galbreath, Anna M., Paterson, N. J.
Gardiner, Edward S., Houston, Texas
Gasperich, Frank J., Macon, Mo.
Gass, P. Y., San Bernardino, Calif.
Gibson, Preston W., Winfield, Kans.
Giles, Mary E., S. Pasadena, Calif.
Gillinder, F. Robert, Lebanon, Pa.
Gordon, Wilma R., Augusta, Ill.
Grange, Josephine H., Sheridan, Wyo.
Grant, Jack H., Chicago, Ill.
Gray, Grace L., Kahoka, Mo.
Greene, Mildred E., Waltham, Mass.
Green, Philip A., Troy, N. Y.
Griggs, Charles B., Oroville, Calif.
Gross, Lester P., Jefferson, Maine
Gross, Olga H., Pittsfield, Maine
Guest, George H., Philadelphia, Pa.
Hammond, R. B., Rockford, Ill.
Harris, Frances W., Daytona Beach, Fla.
Hartman, P. F., Mesa, Ariz.
Hartner, Charles, Madison, Nebr.
Haveman, Elsie M., Monrovia, Calif.
Hayman, Ben E., Galveston, Texas
Hays, Robert W., Ft. Collins, Colo.
Hazelton, Franklin L., Bradford, Pa.
Hazzard, Charles, New York, N. Y.
Head, Ralph B., Denver, Colo.
Hensley, John R., Crystal Lake, Ill.
Herdeg, Howard B., Buffalo, N. Y.
Herzog, E. C., Brainerd, Minn.
Heuck, C. L., Nampa, Idaho
Hilliard, Kirk L., Pleasantville, N. J.
Hinsperger, C. V., Windsor, Ont., Can.
Hockett, Wayne A., Waseca, Minn.
Hoffman, Linford L. B. Pitman, N. J.
Holcomb, W. L., Denver, Colo.
Honsaker, C. Coy, Philadelphia, Pa.
Houghtaling, Edward B., San Diego, Calif.
Howard, E. W. S., Astoria, L. I., N. Y.
Howells, Mary S., Corvalis, Ore.
Hull, Helen F., San Francisco, Calif.
Humphreys, Marshall E., Tuscumbia, Mo.
Humphries, Ruth E., Waltham, Mass.
Hunt, Kathleen A., Middlebury, Vt.
Hurst, Anna Holme, St. Joseph, Mo.
Hutchison, Carrie E., Dayton, Ohio
Inwood, Garfield, Chicago, Ill.
Jenkinson, A. W., Lancaster, Ohio
Johnson, Clair S., Mecca, Calif.
Johnson, D. F., Grinnell, Iowa
Johnson, Guilbert L., Cleveland, Ohio
Jones, Francis J., Kansas City, Kans.
Jorstad, E. O., Marshall, Minn.
Kaiser, Charles A., Lockport, N. Y.
Kanfer, T. A., Greenfield, Iowa
Keam, Elinor M., Melbourne, Australia
Keesecker, Raymond P., Cleveland, Ohio
Kell, Robert J., Saratosa, Fla.
Kenega, H. W., Hugo, Okla.
Kerr, Clarence V., Cleveland, Ohio
Kierstead, William B., Providence, R. I.
Kilcrease, V. W., Casa Grande, Ariz.
Kimberly, Faye, Menlo, Iowa
Kimbley, Howard G., San Francisco, Calif.
Kincade, Paul A., Bartlesville, Okla.
Kingsbury, L. C., Hartford, Conn.
Kinney, Alma C., Kansas City, Mo.
Kinney, Kenneth F., Detroit, Mich.
Kirkpatrick, Hugh T., Miami, Fla.
Knight, R. Russell, Montebello, Calif.
Knowles, William T., Boston, Mass.
Kyle, Norma V., Flushing, L. I., N. Y.
Lahrson, Glennard, Long Beach, Calif.
Lamb, Ivan P., Palisade, Nebr.
Leeper, Paul L., Hutchinson, Kans.
Leibov, Sam H., St. Louis, Mo.
Leonard, J. Paul, Detroit, Mich.
Leweaux, Virginia V., Portland, Ore.
Lindquist, Wilbert G. A., West Medford, Mass
Lippincott, H. A., Moorestown, N. J.
Lippincott, R. C., Moorestown, N. J.
Logan, Claude E., Dallas, Texas
Logan, Louis H., Dallas, Texas
Long, Harold J., Toledo, Ohio
Lose, Wilbur A., Los Angeles, Calif.
Losee, Gordon P., Westfield, N. J.
Loveland, Mark M., Hollywood, Calif.
Lovely, Ralph N., Long Beach, Calif.
Lowell, Vernon H., Brunswick, Maine
Lundgren, Abel L., Fort Dodge, Iowa
Lyda, E. R., Seattle, Wash.
Lypps, R. A., Detroit, Mich.
MacEwing, Bruce, Long Beach, Calif.
MacFarland, David L., Bernardsville, N. J.
Mack, H. A., Seattle, Wash.
Maclaskey, Elizabeth, Gridley, Kans.
MacLean, A. L., Belmont, Mass.
MacLeod, J. M., Moncton, N. B., Can.
Madigan, T. H., Denver, Colo.
Magoon, Eva Waterman, Providence, R. I.
Markle, Charles C., Waynesboro, Pa.
Matheny, C. C., Detroit, Mich.
Matthews, S. C., New York, N. Y.
Mauck, Anna Lena, Macon, Mo.
Maxfield, John F., Newark, N. J.
Maxwell, D. Deane, Carbondale, Pa.
Mayer, Arthur D., New York, N. Y.
Mayer, Emil L., Louisiana, Mo.
McBride, Julius, Houston, Texas
McClure, H. D., Kirksville, Mo.
McCullough, Ray R., Carlisle, Pa.
McMurry, C. S., Utica, Kans.
McNerney, J. R., Des Moines, Iowa
McWilliams, E. W., Columbus Jct., Iowa
Medlar, Agnes S., Philadelphia, Pa.
Mentzer, Mary R., Bedford, Pa.
Miller, Anna Beslin, Delta, Colo.
Miller, Bertha L., Springfield, Mass.
Miller, Emery T., Twin Falls, Idaho
Miller, John R., Plainview, Texas
Miller, O. L., Harrisonburg, Va.
Miller, S. B., Cedar Rapids, Iowa
Milliken, Charles, Whittier, Calif.
Minch, Irma M., Philadelphia, Pa.
Miner, William W., Rutherford, N. J.
Mintzer, Harry F., Woodlynne, N. J.
Montague, W. C., Evansville, Ind.
Montano, Helen L., Ardmore, Okla.
Montgomery, G. L., McCook, Nebr.
Moore, J. E., Appleton, Wis.
Moore, John L., Windom, Minn.
Moore, R. L., Los Angeles, Calif.
Moorton, Peter J., Detroit, Mich.
Morgan, I. N., Steele City, Nebr.
Morgan, L. R., Alton, Ill.
Morgan, Muriel F., Berkeley, Calif.
Morris, Guy E., Clarksburg, W. Va.
Moyer, M. E., Hamilton, Ont., Can.
Myers, E. W., Forks, Wash.
Nelson, Frank C., Malden, Mass.
Nagel, Leonard C., Cleveland, Ohio
Nicholls, Melvin H., Melrose, Mass.
Nickell, I. E., Smith Center, Kans.
Northup, Anna Elvira, Moose Jaw, Sask., Canada
Nortner, Martha G., Minneapolis, Minn.
Nowlin, L. A., Davenport, Iowa
Noyes, Alston W., Clayton, Mo.
Noyes, Jane P., Clayton, Mo.
Nudd, Bessie, Burlington, Iowa
Nye, Carlos, Buenos Aires, Argentine, S. America
Nye, Robert E., London, England
O'Brien, Francis R., Upper Darby, Pa.
Ogle, J. M., Olympia, Wash.
Oliphant, L. Alice, Virginia, Ill.
Oliphant, Pearl, Santa Cruz, Calif.
Outt, Walter J., Jersey City, N. J.
Parlin, Ralph B., New Bedford, Mass.
Parsons, Bessie B., New Bedford, Mass.
Parsons, Clifford S., New Bedford, Mass.
Patterson, A. B., Louisville, Ky.
Patterson, E. W., Louisville, Ky.
Perrin, Leo L., Detroit, Mich.
Perry, Iris A., San Francisco, Calif.
Pettapiece, H. J., Camden, Maine
Pettapiece, M. C., Camden, Maine
Phelps, Elmer T., Birmingham, England
Powell, B. K., Lorain, Ohio
Powell, J. Gladys, Lorain, Ohio
Prescott, A. B., Hugo, Colo.
Price, J. A., Oklahoma City, Okla.
Pritchard, William W. W., Los Angeles, Calif.
Prudden, M. A., Fostoria, Ohio
Pumphrey, Irvin L., Washington C. H., Ohio
Quiros, G. Quiros, San Jose, Costa Rica
Ramsdell, L. P., LaPorte, Ind.
Ramsey, F. Earl, Chester, W. Va.
Ramsey, Evelyn Lee, Chester, W. Va.
Ray, A. D., Cleburne, Texas
Redford, M. E., Tarkio, Mo.
Reed, A. G., Tulsa, Okla.
Reed, C. James, Ortonville, Minn.
Reid, J. H. Rochester, N. Y.
Renjilian, J. A., Fairfield, Conn.
Richardson, Ira F., Fremont, Nebr.
Richardson, Ross B., Detroit, Mich.
Robbins, Edward, Los Angeles, Calif.
Robbins, Ralph B., Cincinnati, Ohio
Robbins, Ray, Cincinnati, Ohio
Robey, William H., Sullivan, Mo.
Rockhill, L. H., Lodi, Calif.
Roeder, Julia D., Lancaster, Pa.
Rogers, K. R., Clear Lake, Iowa
Rohweder, H. B., Nashville, Tenn.
Rolf, Harry G., McPherson, Kans.
Roscoe, Percy E., Cleveland, Ohio
Rothman, H. M., New Lexington, Ohio
Rouse, J. M., Oklahoma City, Okla.
Rouse, W. J., Norman, Okla.
Rushton, John C., Jr., St. Anthony, Idaho
Ryan, Thomas J., Waterbury, Conn.
Ryel, Jennie A., Hackensack, N. J.
Santucci, Thomas F., Philadelphia, Pa.
Scallan, Agnes W., Chicago, Ill.
Schleusner, Richard R., Paterson, N. J.
Schneider, Arnold J., Willmar, Minn.
Schoelles, George J., Bronxville, N. Y.
Schoen, Harry E., Kansas City, Mo.
Schubert, M. J., Dayton, Ohio
Schwartz, Maurice, Muskogee, Okla.
Schwartz, Samuel S., Kansas City, Mo.
Semple, Sydney G., London, England
Sewall, Norman K., Bloomfield, N. J.
Sheets, Don, Hamilton, Ohio
Sheppard, Richard A., Cleveland, Ohio
Shumate, F. E., Great Bend, Kans.
Sidebottom, Dorothy E., Boston, Mass.
Siehl, Walter H., Cincinnati, Ohio
Sigler, Vane B., Trenton, N. J.
Sikkenga, A. Leon, London, England
Simmers, Maurice H., Los Angeles, Calif.
Sipple, Ledley M., Los Angeles, Calif.
Smalley, Maurice W., Miamisburg, Ohio
Smith, Elizabeth E., Asheville, N. C.
Smith, Ralph E., Los Angeles, Calif.
Smith, Ursula C., Amsterdam, N. Y.
Spear, Carl, Oneonta, N. Y.
Speer, Reed, Pittsburgh, Pa.
Speltz, Merritt F., Bement, Ill.
Spencer, Charles H., Los Angeles, Calif.
Sperry, Dean E., Peoria, Ill.
Slaughter, M. S., Webb City, Mo.
Stack, E. William, Traverse City, Mich.
Staff, L. E., Jacksonville, Ill.
Stanfield, L. M., Farmington, Mo.
Starbuck, M. B., Whittier, Calif.
Steele, Frederick A., Summit, N. J.
Steinbaum, Paul S., Los Angeles, Calif.
Sterrett, Ralph R., Yakima, Wash.
Stewart, J. Gordon, Beggs, Okla.
Still, R. H., Macon, Mo.
Stockebrand, A. L., Evanston, Ill.
Stohlberg, G., Mudbaden, Minn.
Stoneman, A. B., Albany, N. Y.
Strahan, Lolen R., Paso Robles, Calif.
Streeter, Wilfrid A., London, England
Sturges, A. Benjamin, Wallingford, Conn.
Sunderwirth, C. H., Eldorado Springs, Mo.
Thompson, Garret E., Peoria, Ill.
Thorburn, William F., New York, N. Y.
Thurston, Dale W., Los Angeles, Calif.
Thurston, F. H., Boise, Idaho
Tilden, R. E., Cleveland, Ohio
Tilley, C. E., Lincoln, Ill.
Tinkham, Anna G., Waltham, Mass.
Trabue, Josephine A., Pittsburg, Kans.
Ulbrich, A. P., Detroit, Mich.
Upton, Charles A., St. Paul, Minn.
Van Vleck, Clinton, Jackson, Wyo.
Vastine, H. M., Harrisburg, Pa.
Vorhees, Ralph D., Cleveland, Ohio
Waddill, Robert G., Burns, Kans.
Wales, Anne L., Providence, R. I.
Wallace, Raymond R., Caldwell, Kans.
Walmsley, Asa Gordon, Bethlehem, Pa.
Warner, C. C., Grand Rapids, Mich.
Waters, Eugene C., Cleveland, Ohio
Watson, Carl L., Boston, Mass.
Weaver, Charlotte, Akron, Ohio
Weber, Harold M., Rochester, N. Y.
Westaver, E. R., St. Louis, Mo.
Westerman, J. Maurice, Lancaster, Pa.
Weston, Edith S., Los Angeles, Calif.
Wharton, V. L., Lake Charles, La.
White, Meredith, Mobile, Ala.
White, Walter E., Chillicothe, Mo.
Whittenberger, Claude R., Caldwell, Idaho
Wiegand, Edward C., Sandusky, Ohio
Wiemers, J. E., Marietta, Ohio
Wilkin, Osmer J., Newburgh, N. Y.
Williams, Charles G., Kansas City, Mo.
Williams, E. L., Buffalo, Mo.
Wilmot, Geraldine W., New York, N. Y.
Wilson, S. M., Los Angeles, Calif.
Winslow, Carl G., Chicago, Ill.
Wood, Charles W., Holyoke, Mass.
Wunderlich, R. C., St. Petersburg, Fla.
Yeater, I. F., Altoona, Pa.
Young, J. Tilton, Fremont, Nebr.
Young, Wallace E., Woods Hole, Mass.
Zaehringer, Herman P., Buffalo, N. Y.
Zeigler, B. W., York, Pa.
Zuspan, N. A., Grand Island, Nebr.

Diagnosis and Treatment

INDUSTRIAL SERVICE*

WALTER E. BAILEY, D.O.
St. Louis

One of the major activities of organized osteopathy has been the extension of osteopathic services to the masses. This work has been fostered, planned, and carried into successful operation under the leadership of such men as Drs. Thomas R. Thorburn, Edward A. Ward, William O. Kingsbury, J. J. McCormack, and E. P. Malone, with the editorial help of Dr. Ray G. Hulburt and the advice and inspiration of Dr. R. C. McCaughan.

The first contacts with insurance companies and employers with respect to the use of osteopathic services in industry were due to the pioneer work of individuals. Each time an osteopathic doctor demonstrated his ability to return an injured workman to health and to employment (many times after a failure of treatment by so-called "old-school" measures), the favorable attention of both the employer and the insurance company was gained.

In rural communities and in suburban districts the personal ability of an osteopathic physician becomes known to all the inhabitants. For this reason, successful and satisfactory cooperation usually has been gained from the insurance adjustor and from the employer. Occasionally, a clerk or official from the home office of the insurance carrier held up the reports and payments, because the right of a workman to "free choice of a physician," or the legal status of osteopathic physicians, had not been clearly established or made known to the officials. In some cases statutes in the states where the services were rendered did not give unlimited rights and privileges to osteopathic physicians, or they were not so clearly defined in the states where the home offices of the insurance carriers were situated.

Whenever controversy or misunderstanding developed, and it was made known, the Bureau of Industrial and Institutional Service of the A.O.A. has investigated the law, has cited precedents for favorable action, and has prepared information for individual conferences or secured favorable rulings.

It may be accepted as a fact that most insurance companies and employers, their staffs as well as executives, have favorable opinions about osteopathy. As individuals they do not wish to discriminate against the osteopathic practitioner, but in many instances their medical departments are under nonosteopathic control.

Reports have come to this Bureau of the employment of osteopathic physicians and surgeons for staff positions for either full or limited service, despite the priority of so-called "old-school" men. Certain life and accident insurance companies have definitely recognized the osteopathic practitioner. They accept his services and reports without question.

Workmen's compensation legislation has become a general plan to provide advantages for the protection of the workman injured during industrial employment. Such laws were originally designed to further a safety campaign for the prevention of accidents. The second purpose became evident and necessary, "that quickly available first-aid and subsequent medical care was needed to restore an incapacitated workman to a useful place in industry, in either the same or some other suitable occupation." The third purpose included reimbursement, not for damages, but for actual loss of function or anatomical loss, with provision of an immediately available schedule of payments that would sustain the workman and his dependents through the time of his disability. The fourth purpose was to avoid the legal delay in the courts of law and to substitute an industrial commission, authorized to study the needs of the employer or the workmen in providing the above services. Industrial commissions were established to administer the laws, hear claims, adjudicate controversies, and act for the state in ways that would ensure speedy action and proper professional services; to see that justice was done in the light of awakened public opinion. The fifth purpose that has developed is, to insure against certain occupational diseases, notably silicosis, forms of pneumoconiosis and constitutional derangements peculiar to certain occupations.

If the osteopathic profession is to gain the full advantage of the contacts that have been made by individuals, it is necessary that we inform ourselves more fully about the laws in our respective states, the administration and rulings of the industrial commissions, and the aims of our professional organizations in this movement; we must prepare ourselves individually to serve better than any other individual in our community, and it is vital that we train our younger men for these professional tasks. Professional ability and training must not lag behind the march of progress that is being made in contacting employers and insurance carriers, or the program of labor contact that is being pushed by Dr. McCormack and his subcommittee.

The industrial surgeon has the following specific duties:

(A) To familiarize himself with the Workmen's Compensation Law in his state;

(B) To render first-aid to the injured workman;

(C) To give him a complete examination;

(D) To restore function;

(E) To report the results of his services to (1) the employer, (2) the insurance carrier, and (3) the Workmen's Compensation Commission. A copy of the report should be retained in his own files. This report should be made on the regular forms provided, according to the laws in each state; the use of signed carbon copies is permitted. The report should include:

The name, address, age, sex, marital status and duties of the employee.

The name, address, etc., of the employer.

The name, address, etc., of the insurance carrier.

The patient's statement as to how, when, where the accident occurred, whether in line of duty or employment or not, and the immediate consequences of the accident. Statements of witnesses may be used where patient is unable to give answer.

Statement as to the exact injury sustained and probable effects thereof, with the physical signs, x-ray diagnosis (by whom made), or other clinical, physical or laboratory diagnosis.

Statement as to recommended treatment, duration and probable cost.

Statements as to ability of patient to work either at same or lighter duties and as to probable time of beginning either the same or other duties.

It is well to remember that any licensed physician or surgeon may render first-aid and be recompensed therefor, but that subsequent treatment may be collected for only if authorized according to the regulations and laws of the various states. In some states, the law provides for free choice of a physician by the injured employee; in others the law provides for a limited free choice from a panel of surgeons registered with the insurance commission, and in still other states the choice of physician or surgeon rests entirely with the employer or his substituting insurance carrier. The employee in some instances may choose his own physician, providing that he pay personally for the services rendered following his own personal contract and arrangements.

In brief, therefore, it may be said that authorization for subsequent treatment must be obtained from one or more of the responsible parties in order to avoid controversy and disappointment. Familiarity with one's own state workmen's compensation laws is invaluable.

Subsequent reports should be made whenever unusual circumstances arise, such as complications of infection, nonunion, development of periostitis, osteomyelitis, deformity, or any other condition of physical, mental, or neurological

*Delivered before the Orthopedic Section at the Forty-First Annual Convention of the American Osteopathic Association at Chicago, July, 1937.

importance, which may tend to alter the treatment that had been outlined or the term and type of disability ensuing.

A final report should be made to the same parties entitled to the original report and this final report should include an estimate of:

(*a*) Full recovery or evaluation of disability, either partial or complete, temporary or permanent;

(*b*) Recommendations for further treatment if needed;

(*c*) Recommendations for return to same or limited work or changed occupation, according to condition of the patient, and time when full or partial duties may be resumed;

(*d*) Final bill specifying in detail the itemized charges that have been incurred (this bill is usually made in triplicate).

The surgeon may be called upon to make an examination and report for an employer or insurance carrier, or at the instance of the industrial referee or commissioner who may wish an unbiased report from one in whom he has confidence, and who has no contract relations with any of the parties in a controversial case. Such reports should be in conformance with the principles outlined in the workmen's compension laws, "to provide competent medical services and the prompt rehabilitation of employees with specified rates of compensation for injuries leading to various states of disability." The amounts provided for loss of certain extremities or members of the body may be laid down specifically or may be computed from the laws or precedents in each state. The surgeon must be able to describe definitely such losses and disabilities and to evaluate them according to the scale of both physical and functional loss. It is the duty of the industrial commission to state the amount of financial recompense allowable after having the facts presented by the physician.

McBride's "Evaluation of Disability"[1] provides useful information as to the laws in the various states and as to the methods of determining the actual loss incurred, together with various scales of translating these losses into definite percentages. This method will be found invaluable in providing an accurate estimate which may be stated in a court hearing with supportive evidence as to the manner in which the conclusion was reached.

There are certain general rules which will make for cooperation and pleasant profitable relations under the workmen's compensation act:

(1) Thorough and accurate training in methods of handling the professional problems involved in such emergency work.

(2) Convenient location and full usable equipment for all work.

(3) Arrangement of hours, appointments, and office including attendants so that prompt efficient service may be rendered and employee returned to work with the least possible delay.

(4) Personal attendance and supervision of all details of treatment and reports. (The injured workman is entitled to the best of services that medical progress may devise.) The workman's livelihood and that of his dependents can only be ensured by rehabilitation to his former job. Financial compensation is only a feeble gesture on the part of society to supply a bare subsistence. The original purposes underlying compensation laws are: safety education and legislation; prompt medical treatment with restoration of the injured workman to his usual employment as a valuable member of society; the prompt settlement of claims for injury without legal delay or quibbling, and last and least, an attempt to make some financial reimbursement for the actual loss of members or function which would hamper the individual in holding useful and gainful employment.

(5) Prompt, concise, unbiased reports which enable one who has not seen the injured party to be fully informed as to the pertinent facts that would help to fulfill the purposes of the compensation law.

(6) Prompt restoration of function with return of employee to work (the same work, if possible; lighter work if necessary; but with consideration for the fact that a man at work is one with self respect and soon returns to full duty, while one who is unable to work is the victim of disappointment and tends to become a prey to self pity. He soon loses the desire to accept his full responsibilities toward himself, his family, and his employer).

(7) Financial charges: Some laws specify certain fixed charges. Others contemplate charges that are fair and equitable and in accordance with the usual charges for like services by the physicians in a community for persons in similar circumstances. X-rays, laboratory work, dressings or splints, and hospital accommodations should be those which ensure the best medical results, but must be in accordance with those which may be authorized by the responsible parties or provided by the statutes for similar injuries.

(8) Careful determination as to the relationship between disease and traumatic disability. Traumatic disability is compensable whenever incurred in the line of duty in most states, but disease is compensable only in certain states and for certain diseases in particular types of hazardous occupations. It is the physician's duty to make sufficient examination as a basis for a report and to state his conclusions definitely for the benefit of all parties concerned.

(9) Sympathetic understanding, the use of all measures designed to eliminate physical and mental suffering, the firm insistence on obedience to instructions as to treatment or care; personal competent attention with neatness and usefulness of dressings will do much to gain and retain confidence.

(10) X-rays in two planes, which afford visual evidence as to the condition present and will be invaluable for record and for diagnosis. Expensive x-ray examinations may be avoided by careful physical examination to localize the region which may be pathologically involved. For example, in simple rib injuries, one may determine the point of probable bone injuries and place a small aluminum "O" at the spot and so position the patient that the central ray will go through the fracture line and be likely to show an incomplete fracture or one without displacement, using only one 8 by 10-inch film. Accurate physical examinations allow x-ray examination in two views of ankles or wrists and similar parts on one 5 by 7-inch film.

(11) Infection leads to disability. One should beware of closure of lacerations and contused or punctured wounds without thorough debridement and cleansing, with measures to ensure free drainage and localization of infection, before any attempt is made at complete coaptation. Tetanus antitoxin is an accepted prophylaxis in many such injuries. The responsibility for nonuse, when indicated, must rest only with the patient, and it is best to have a release in writing from any patient who refuses any recommended measure for diagnosis or treatment.

(12) In fractures the rule is *"splint them where they lie."* The physician should avoid unnecessary traumatism to the soft tissues. Early reduction and intelligently applied splints, casts, or supports after thorough reduction and accurate replacement, is essential, particularly in all fractures involving joints; x-ray views for diagnosis and as a check on the sufficiency of reduction are necessary, and possibly follow-up views to show healing process and maintenance of good alignment. Frequent inspection of dressings and early functional restoration of movements are invaluable in preventing disability. Local anesthesia may be successfully used in many cases to advantage as outlined in most of the newer standard books on fractures. We recommend a thorough familiarity with standard books on fractures and on surgery, some of which are listed in the references attached. It may be well to include Kanavel[2] on the infections of the hand, Steindler[3] on deformities of the spine and thorax, and many other monographs and magazines as found under x-ray, surgical, and orthopedic classifications. McBride's book on disability mentioned previously and Dodd's "Administration of the Workmen's Compensation Law"[4] will also provide much educational matter.

(13) As to the term, *low-back injuries,* it has been found advisable in most states to use the simple designation of strains or sprains in back injuries, describing the injuries in the simple terms that would be used in designating injuries of any simple joint, reserving the osteopathically accepted nomenclature for our own purposes and discussions. It is well to state the signs and symptoms which would allow any trained physician, insurance official, or industrial commissioner to understand the condition in the light of his general knowledge of injuries and their consequences. The methods of diagnosis and treatment of these conditions is, or should be, familiar to those who wish to do industrial work, and reference to the current articles in our professional magazines and reference books will refresh one's mind as to the methods found to be most acceptable. Familiarity with the symptoms of toxic conditions, with manifestations in the low-back region, the knowledge of the symptoms of arthritis with ability to differentiate those manifestations from acute traumatic injury, a thorough knowledge of the anomalies of the spine and the evaluation of their importance industrially, should be obtained.

(14) In some states, under certain conditions, cases may be referred to an osteopathic physician after first-aid, standard "old-school" treatment, or surgical care has been given, for the sole purpose of restoring function. This is a valuable specialized service, and no means should be neglected, such as manipulation, passive movements, physiotherapy, and graduated exercises, to restore the injured to industry.

One's ability in industrial work is dependent upon his knowledge, skill, and judgment, and his personal attributes of kindness, promptness, fairness, and coordination of professional ability with satisfactory records, reports, and relations with workmen, employers, insurance companies, and possibly professional colleagues.

Personal reputation and professional standing are needed, as evidenced by the many inquiries as to membership within our professional organization on the part of those who may be applicants for positions as examiners or industrial surgeons.

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TWO THINGS I OWE

Two things are due every truly osteopathic organization—due from every osteopathic physician within the territory covered by the society.

Two things I owe my local, divisional, and international professional societies. I owe them my financial and my moral support. If I am called upon for service, I should serve. If I am not called upon, I should volunteer for some task—even the most lowly. There is no osteopathic organization which is not in need of more workers than are busy—none in which there are no tasks waiting to be done.

JUVENILE ENDOCRINOPATHIES

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During the last half century a great mass of literature has accumulated around the developing science of endocrinology; this fact alone is proof of the study which is being made in this direction. So much interest and speculation have been aroused, however, that many careless and extravagant statements have been published, and many uncontrolled experiments have been performed by overenthusiastic investigators. As a result, it is a tedious task to sift from the vast literature on the subject the valuable, well-established facts which are still comparatively few in number, for our study of the endocrine glands is still in its infancy, and few methods of accurate determination of function have been devised.

In this paper I shall try to outline the principal symptoms and give tentative diagnoses of perverted glandular function. These must, of necessity, be incomplete, but they are tendered with the hope that they may stimulate thought and further study along these lines. If consideration of the diagnoses and consequences of glandular derangements does no more than ward off from their victims the obloquy under which they have long existed, even then it will have been worth-while.

PITUITARY

According to prevailing belief, the posterior lobe of the pituitary gland secretes a hormone which causes constriction of the blood vessels with rise of arterial pressure. It also increases the secretion of urine, of the mammary glands when in functional activity, and of the cerebrospinal fluid. The anterior lobe exercises a stimulating effect on the growth of the skeleton and probably on connective tissue in general. The pituitary alone may be considered a whole glandular system.

Hyperpituitarism.—This is a condition that leads to abnormal tallness originating in early childhood and continuing until epiphyseal closure prevents further growth. It is supposed to be due to an increased activity of the growth-promoting hormone of the anterior lobe together with secondary gonad insufficiency. This does not include those cases of inherited familial tallness without genital hypoplasia.

Hypopituitarism.—This may result in any of several types of conditions, of which only those affecting childhood will be considered here.

Adiposogenitalis dystrophy, Fröhlich's syndrome, and adipositas cerebralis are synonyms for the chronic condition which is characterized by obesity of a typical distribution, hypoplasia of the sex organs and a stature which may be stunted, normal, or overdeveloped. The time of appearance of symptoms may be at birth, following an acute infection, at any time during childhood or at puberty.

The overdeveloped, obese infant with external genitalia which remain persistently infantile, may be considered as a congenital type. The etiological factor is probably a germinal defect in the hypophysis which is generally disclosed by investigation of the family history. In contradistinction to the infant with thyrogenous obesity, this type of child develops normally along mental lines.

The type which appears insidiously during childhood without an apparent relationship to acute or chronic infections may perhaps be traced to a pituitary gland which may have been slightly affected at birth or shortly thereafter. It is possible that there may have been an unrecognized acute infection during infancy or early childhood.

The typical Fröhlich syndrome with dwarfism is of much less frequent occurrence than the forms with a normal or increased stature. Primary preadolescent hypopituitarism may be differentiated from primary preadolescent hypogonadism by its well-proportioned, athletic physique as against the poorly developed musculature of the latter condition.

The appearance is characteristic. In the male the general body contour is of the female type, with high waist-line

and well pronounced hips. The adiposity has a predilection for the breasts, abdomen and buttocks; it assumes a girdle effect across the abdomen, sides and back, hanging in folds, like an apron, in the more severe grades of the disease. The mammae are well developed and pendulant and there is an increase in fat deposit on the back of the neck. The extremities are usually free from fat, in contrast to the thyrogenous form. The accumulation of fat varies but, even in the absence of actual obesity, the distribution is found in the characteristic regions.

The condition of the sex organs depends upon the age at which the adiposogenital syndrome occurred. Onset in the prepuberal period results in hypoplasia of both internal and external genitalia. If it occurs at puberty or shortly thereafter, the internal organs are hypoplastic and the external are either fully developed or slightly retrogressed with a partial development of secondary sex characteristics.

In the male, preadolescent involvement results in a small penis which may be buried in fat cushions, or a small scrotum with a median raphé and folds simulating the formation of labia majora, diminutive testes with a partial or complete cryptorchidism, small prostate, scanty pubic hair of female distribution, enlarged breasts and the above mentioned female contour.

In the female, the clitoris is diminutive, labia are small, uterus is infantile, pudendal hair is sparse and the breasts are large and pendulous, rich in lipoid but poor in glandular substance. The onset of menstruation is delayed and then may become irregular. In later life there may be amenorrhea, frigidity, and sterility.

In both sexes the skin is delicate, pale and smooth, but in some instances it may resemble the dry, myxedematous condition present in hypothyroidism. The nails may show trophic disturbances. The hair is sparse everywhere except on the scalp. Pubic hair is heterogenous in its distribution. The hands are small and fingers taper. Ossification may be normal or slightly retarded in bone nuclear development and delayed in epiphyseal closure. Dentition is normal.

Disturbed metabolism is evidenced by polydipsia, polyuria, and increased carbohydrate tolerance. The basal metabolic rate varies from normal to a slight reduction. The effect on the blood is inconstant and variable, with a reduction in the total number of red and white blood cells and a relative lymphocytosis.

The mental and psychic status in adiposogenital dystrophy ranges from normal to a marked degree of alteration. The types of alteration noted in a fairly large series are as follows: the mental retardation may be marked or the child is deficient in school work and apparently normal at home; there seems to be an inability to concentrate or to grasp simple arithmetical problems. There is a tendency to sleep and nap, especially in those cases where there is a possibility of encephalitis having been present. The children are emotional and easily aroused to anger and outbursts of so-called "brain-storms"; they are disobedient and display various types of behavior disorders. Some like to play with children of a younger age or with dolls and babies.

The beneficial results of treatment must be evidenced by increased growth, increase in size of the external genitalia and amelioration of the mental and general symptoms. Contrary to a belief that is quite general, loss of weight itself is not an adequate criterion but must be accompanied by a redistribution of fat—reduction in the characteristic areas and increase in normal areas.

PINEAL

This gland is larger in children than in adults. It begins to decrease in size about the seventh year. It has very little typical secreting tissue, but its rich blood supply suggests an active function. It is more or less a logical conjecture that this gland regulates or delays the onset of puberty, that is, it acts on other glands to delay the appearance of adult characteristics until the age of adolescence. This conclusion is arrived at from the fact that sexual and mental precocity in children is caused by disease, for example tumor, of the pineal. This gland seems to serve its purpose in childhood. After puberty it atrophies and apparently becomes negligible.

The pathological changes most frequently observed in the pineal body are tumors of various kinds, which occupy the site of the gland. Atrophy and sclerosis also are described frequently. Inflammation is seen in meningitis, especially of the tuberculous type. These pathological conditions give rise to two groups of symptoms—neurologic and metabolic. The neurologic symptoms are those of any midbrain tumor, as manifested by headache, vertigo, optic neuritis, motor ocular changes and increasing drowsiness. The metabolic symptoms are adiposity, sexual changes, and cachexia. The sexual picture consists of:

1. Early sexual development evidenced in enlargement of sex organs, presence of pubic hair and universal hypertrichiasis, with change in voice to that of the deep masculine type.

2. Precocious mental development manifested by maturity of thought, mind, and speech.

3. General body overgrowth beyond that of the true age.

The syndrome has been found to occur mostly in boys. When present in girls, it includes secondary but not primary sex changes. Cachexia appears as a secondary symptom.

THYROID

The active principle of the thyroid gland, thyroxin, facilitates the oxidative activities of the body and thus regulates the general level of metabolism. The thyroid gland, therefore, keeps the individual in tune with his surroundings. Its derangements affect the entire glandular system.

Enlargement of the thyroid: This condition has been noted in the newborn; in some instances the enlargement has been sufficient to complicate labor. Pressure from such glands has been known to cause death. Congenital enlargement of the thyroid usually is transient and disappears in a relatively short time, but cases have been reported in which the enlargement extended into adult life. It is stated by some authorities that cases of congenital enlargement of the gland are born of goitrous mothers.

Simple enlargement of the thyroid gland is fairly common in the prepuberal period. It is more common in girls but is not rare in boys. There are no symptoms other than enlargement associated with this condition and the basal metabolism rate is normal or slightly increased. Usually when puberty is established, the swelling disappears, but to what extent the so-called physiological enlargement becomes toxic after puberty has not been determined. It is wise to be on the lookout for toxic symptoms while the gland is enlarged and for at least a year after its apparent return to normal size. Determination as to whether or not toxic goiter in the adult is always preceded by simple enlargement of the thyroid during childhood might give to the treatment and aftercare of simple goiter an importance not hitherto appreciated.

Hypothyroidism.—Cretinism is a disorder of metabolism resulting from an alteration in, or absence of, the thyroid body or its functions. It is with sporadic cretinism that we are concerned in this country. In this type there is no known cause other than a congenital absence of the thyroid gland. This condition is said to be more common in the children of goitrous mothers. There is no report of a cretin in the negro race.

It is generally believed that evidences of cretinism first appear during the second half of the first year of life, at least the condition is usually recognized at this time. The manifestations of cretinism may be classed as early, mild and complete. The latter are easily recognized, but the former usually are overlooked. Occasionally some manifestations of thyroid deficiency may be observed at birth, but in most cases the signs are not recognizable until the eighth or tenth week of life. Among the very early symptoms are sparseness but not coarseness of the hair, slight hoarseness of the voice and some thickening of the subcutaneous tissues. The

infant is more quiet than normal, and anyone familiar with the facies characteristic of cretinism can see a suggestion of it in the infant.

By the second or third month of life the tongue may be so large and thick that it fills the mouth and may seriously interfere with nursing. The thickening of the subcutaneous tissues becomes more marked at this time, the hoarseness becomes more noticeable and the outer ends of the eyebrows are scanty or absent; the eyes are far apart and have a suggestion of the piglike expression which is later very striking. The sclera is bluish white. During rest the cheeks, especially on either side of the alae nasae, have a definite lemon-yellow tint. The child's body feels cool. There is usually marked simple anemia. The hemoglobin content and the red and white cell counts may be reduced to 50 per cent of normal. The mother begins to notice by this time, that the child is abnormally quiet and seldom laughs.

In most instances typical complete cretinism is unmistakable after the sixth month of life. It is manifested by a characteristic retardation of growth as well as by the intensification of the early symptoms. The infantile bodily proportions are maintained, that is, the arms and legs remain relatively short, the head large and the trunk long. Ossification is slow. The anterior fontanel does not close and may remain open even until the eighth year. The forehead is low and wrinkled when the eyes are open and the nose is broad with a wide flat bridge. Dentition is delayed. The lips are thick and are not held together. Large deposits of myxedematous tissue about the neck and clavicles make the neck appear short and thick. The abdomen is protuberant and almost without exception there is umbilical hernia. The skin is pale, dry and coarse. Eczema is a common complication. Associated with these abnormalities is striking lack of mental development. The infant is sluggish, quiet, and docile unless teased. Speech is delayed and the vocabulary limited. Electrocardiographic studies demonstrate that the T-wave is characteristically low, flat, or inverted.

In very rare instances cretinism assumes a nervous character. This type probably is caused not by hypothyroidism alone, but by deficiency of both the thyroid and parathyroid secretions. In addition to the usual symptoms, the patient shows signs of tetany. These may develop simultaneously with those of hypothyroidism or may precede the apparent onset of cretinism.

Care must be taken to differentiate clearly between cretinism and mongolism for some signs are characteristic of both. In the Mongolian idiot the round face, the elliptic eye and the absence of shortening of the long bones are sufficient to establish differentiation.

Complete mental and physical cure is probable when treatment is started before the child is four months old, that is, before the period of most rapid growth has been completed. It is essential that therapy should continue until after puberty. Development of the body, on the other hand, may be stimulated by suitable therapy after the normal period for growth has passed. Normal size may be attained within a few months and simultaneously most of the external evidences of cretinism may disappear. In a few instances, when the growth is accelerated, development does not continue and the bodily proportions remain those characteristic of cretinism. It is probable that failure of treatment in the past has been in large measure due to the fact that cretinism was not recognized and therapy was not begun until the latent possibility of mental development had been lost.

Hyperthyroidism.—This condition is very rare in early childhood but its incidence, like that of simple goiter, increases with age until the time of puberty. In nongoitrous regions hyperthyroidism is almost never seen in young children.

Because of its low incidence and the great similarity between its manifestations in children and adults, the various signs and symptoms of hyperthyroidism will not be discussed in detail here; as a rule, they are less severe than during adult life. The classic symptoms of enlargement of the thyroid gland—tachycardia, tremor of the extremities, exophthalmos (which is never as marked as in the adult) and elevation of the basal metabolic rate—are frequently preceded by others which, while not in themselves pathognomonic, are suggestive of hyperthyroidism. Among these are: restlessness, irritability, nervousness, instability of the nervous system which causes crying and laughing without apparent cause. It is also not uncommon for children in this condition to sleep poorly, to suffer from frequent headaches and to complain of palpitation of the heart on exertion. The appetite may be impaired and patients may lose weight and strength. The children so affected are usually somewhat taller than average.

PARATHYROIDS

The parathyroids have a relationship to bone metabolism; their hormone is necessary to health. The known function of these glands is to control calcium metabolism in the body, and especially to maintain a constant level of available calcium in the blood. Lack of parathyroid secretion allows the blood calcium to fall to a level where the sedative action of calcium upon the nervous system is no longer adequate. Under these conditions, the nerves are too easily irritated and slight stimuli cause violent nervous reactions. Uncontrollable muscular contractions occur and may be continued for extensive periods. Prolonged contraction of the diaphragm with cessation of breathing is the commonest cause of death. When the parathyroid deficiency is not complete, the irritability of the nervous system may be exaggerated only to the extent that stimuli cause rapidly repeated contractions of the muscles, so that the whole body trembles in a parathyroid tetany.

THYMUS

There is presumed to be a close relation between the child's nutrition and growth and the thymus gland. The basis for this belief seems to rest entirely on the fact that its weight increases after birth and its growth ceases with sexual maturity. Thereafter the thymus tissue gradually atrophies and is replaced by fat, although appreciable remnants of thymus tissue are retained until the end of life. When the thymus fails to atrophy as it should, puberty is delayed and the genitalia do not develop normally.

Hypertrophy of the Thymus.—This condition may produce grave effects, apparently from pressure. Two possible explanations are offered: first, that the enlarged thymus presses on the trachea and thus embarrasses breathing; second, that dyspnea may be caused by pressure on the vagi and phrenic nerves. Various forms of dyspnea, called "thymic asthma" have been referred to an enlarged thymus. An infant so affected frequently lies on his face when sleeping, to relieve this pressure.

The diagnosis of enlarged thymus by physical signs rarely is made positively during life. It may occasionally be palpated by deep pressure over the top of the sternum and there may be dullness on percussion behind the upper part of the manubrium extending down from both lateral borders of the sternum. The area of dullness on the sides of the sternum may be unsymmetrical. Determination of the size of the thymus by means of the x-ray during life has been unsatisfactory; opinions differ as to the accuracy of such observations. The shadow cast by the thymus varies in size according to whether exposure is made at full inspiration, full expiration, or midway between these extremes.

Status Lymphaticus.—By this condition is meant a lowered vitality seen in connection with enlarged thymus and a general hyperplasia of the lymphoid tissue of the body. Virchow reported a lack of development of the heart and arteries associated with this condition. The heart may be small and the aorta narrow and thin-walled. There may be an associated lack of development of the sexual organs, sometimes reaching the condition of infantilism. Varying grades of rickets, with resulting mild or severe bone deformities, are seen in a large number of cases of status lymphaticus. These children may show a fair amount of fatty tissue, but are usually anemic.

It is probable that the fatal results so often seen in status lymphaticus are due to an autointoxication from a lympho-

toxemia, having its source in the lymphatic tissues of the body. The importance of recognizing the condition is very great in respect to anesthesia and for guarding the prognosis in any intercurrent mild or severe disease and as an explanation of sudden death without any known cause.

Some children presenting thymic enlargement and general lymphatism manifest no symptoms; in some their convalescence, especially from infections of the respiratory tract, is prolonged. Sudden death sometimes occurs in young children when nothing abnormal was even suspected. Sudden death connected with anesthesia is reported from time to time, and an enlarged thymus is found at autopsy or by means of an x-ray taken after death.

ADRENALS

The hormone of the medulla, adrenalin, is accepted as the emergency stimulant which prepares the physical organism for sudden strains or violent emotions. Cortin, the hormone of the cortex, shares in preserving metabolic equilibrium, especially in relation to carbohydrate metabolism. Adrenal hormones influence also body growth and development, the complexion, and the growth of hair, and they exert a profound influence upon the gonads. Despite the progress of the last decade, the adrenals are still puzzling. Theory and speculation are more abundant than proof, but they are known to exert a particular influence in keeping the glandular system at work harmoniously to provide bodily equilibrium.

Hemorrhage.—The adrenals before birth are relatively very large organs; in the third month of fetal life they are the most prominent structures inside the body cavity. At birth they are still relatively large, but in early infancy they undergo marked involution, that is, a large part of the tissue breaks down and is absorbed. During this period they are especially subject to spontaneous hemorrhage, sometimes known as adrenal apoplexy. Adrenal hemorrhage in the newborn is probably more frequent than literature indicates.

Diagnosis is considered difficult and is based upon a definite syndrome composed of two groups of symptoms, either one of which may predominate. The symptoms come on suddenly not unlike an acute infection; there may be vomiting and diarrhea, together with:

(A) The symptoms of acute adrenal insufficiency: the infant presents the appearance of "pseudopneumonia of the newborn" with high temperature and rapid respirations, which are not accompanied by any signs of pulmonic involvement as elicited by physical and x-ray examinations. In addition, there are purpura or petechiae, cyanosis, convulsions and metabolic changes such as hypoglycemia and increased nitrogen metabolites, namely, urea, creatinin and uric acid.

(B) The symptoms of internal hemorrhage:

1. General: shock, collapse, weak and irregular pulse, cold extremities, air hunger, increasing pallor.

2. Local: the abdomen is generally distended and gives a boggy sensation, palpable tumor in one or both kidney regions, peritoneal symptoms with intraperitoneal hemorrhage.

Bilateral involvement is practically always fatal.

Tumor of the Adrenal Cortex.—I have found in literature twenty-four instances of precocious puberty caused by tumors of the adrenal cortex. Nineteen occured in girls and five in boys. The characteristics symptomatology is exemplified in a boy of three years of age who first presented symptoms at nine months. He was of Herculean build, had a mannish voice, pubic hair, acne, light mustache, external genitalia of a boy of sixteen years and premature ossification. His mentality was below that of a normal child of his actual age. Autopsy revealed a carcinoma of the left suprarenal cortex which extended into the left suprarenal vein and inferior vena cava, with metastasis into the lungs. The right suprarenal gland and vein were absent. That portion of the left gland not involved by the tumor showed a picture generally found at the time of puberty. The thymus showed involution; the thyroid contained colloid, the testes were immature and did not show any spermatogenesis.

In the female, there is a tendency to the male type, as evidenced by enlarged clitoris, male distribution of pudendal hair, hypertrichiasis and gruff voice. Menstruation is delayed or absent.

In either sex the early stage of the disease is characterized by increased energy and strength with temporary accentuation of sexual desires. Mental and emotional aggressiveness of the masculine variety are likely to accompany the early changes. The condition arising in childhood is known as pubertas praecox.

Addison's Disease.—This is essentially an underfunctioning of the adrenals. It occurs only rarely in older children and never in infancy and early childhood. It is insidious in onset and chronic in course. Pigmentation of the skin and muscular weakness are the outstanding characteristics. There may be diarrhea, while both the blood pressure and temperature are usually lower than normal. The disease is generally considered of tuberculous origin.

PANCREAS

The pancreas has a dual function: it elaborates an external and an internal secretion. It is with the internal secretion, insulin, of the islands of Langerhans that we are here concerned.

Hypoinsulinism.—Diabetes mellitus is a disease of metabolism in which carbohydrate is not utilized efficiently by the body and thereby is caused a derangement of the normal metabolism of protein and fat, as well as of carbohydrate. Although less frequent in early life than later, many children have diabetes mellitus. Statistically, about 4 to 6 per cent of cases commence in the first ten years of life, and the age of puberty shows a high incidence. Even infants in the first year are attacked by the disease. In childhood the condition is somewhat more frequent in girls than in boys.

The symptoms of juvenile diabetes mellitus do not differ materially from those of the adult type, except that the onset is frequently more rapid and the course is shorter in children. In the beginning, and perhaps during several months, the manifestations may be but little marked and the child does not seem ill. In some cases nothing is noticed until coma develops. In untreated cases the teeth decay readily, the skin is dry and harsh, perspiration is diminished, constipation is frequent, there is decided debility, the temperature is subnormal and wasting is progressive and finally extreme. A yellow discoloration of the skin may occur when large amounts of vegetables are consumed. The total secretion of urine may reach three or four times the normal amount, or more. It is pale in color, acid, with a high specific gravity and the percentage of sugar varies from a small amount up to 5 or even 10 to 12 per cent. With the glycosuria there is always a hyperglycemia, so that from the normal 80 to 120 milligrams per 100 cubic centimeters of blood, there may be an increase up to 400 milligrams or more, at which time coma is imminent.

Hyperinsulinism.—A few cases have been reported in which with tumors or with overaction or hypertrophy of the islands of Langerhans, there is persistent hypoglycemia. Such a case is reported in an infant born of a diabetic mother.

GONADS

These glands also have a dual function, that of external and internal secretion. Here are generated the hormones which play an important part in both the bodily and psychic development and the growth of the individual. The gonads are not essential to life, but they are necessary to fit the individual for his position in the social order, which is the final test for racial integrity and efficiency.

Eunuchoidism.—This is a characteristic change in the general habitus of the male, due to a complete or partial loss of functional activity of the endocrine component of the gonadal glands. It may appear at any time within the sexual life, but it generally occurs prior to puberty. It may result from castration, trauma, inflammatory or neoplastic processes of the gland or hypoplasia since birth. The defect is not in the spermatogenic tissue, but in the lack of the hormone-producing cells of Leydig. The intensity of the condition varies from the extreme type as exemplified in eunuchism following castration, to the middle forms of hypogonadism.

Two types of eunuchoidism have been described—the tall

and the obese. The former is the one noted before puberty as primary hypogonadism does not produce obesity prior to the third decade of life. The tall subject is extremely tall, due to an increase in the length of the extremities in comparison with a normally developed trunk, so that the span of the arms is greater than the total length of the body. There is a delay in epiphyseal closure. The stature does not depend solely upon the hypogonadism, but also on the functional activity of the pituitary and thyroid glands. The skin is delicate, velvety and pale. The hair on the head is fairly abundant, but sparse elsewhere; what pubic hair is present is scanty and of female distribution. There is also female distribution of fat on the outer thighs, breasts and hypogastric regions. These patients may develop into the obese type later in life. The genitalia are poorly developed and may be in a rudimentary state; sterility exists. The intelligence is normal, but there are psychic peculiarities due to attempts at readjustment with accepted social procedures.

Hypergenitalism—Pubertas precox: This condition is a premature onset of puberty accompanied by the general systemic alterations and disturbances of that period. It is not only a premature development of the sexual apparatus, but of all systems, so that a boy of three years of age with this condition is actually of puberty age, as evidenced by excessive body and muscular development, hastened ossification and changes in his endocrine glands. The sex incidence of this condition is three females to one male.

Ovarian type: this is ushered in by the appearance of a thin menstrual flow, which later assumes the characteristics of the normal. There is an increase of fat over the mons veneris; pubic hair appears; the vagina becomes more spacious and secretes the normal postpuberal discharge; the uterus and ovaries hypertrophy and the sex impulse is developed. If the condition is the result of a tumor, this may be felt in the abdomen. It must be borne in mind that true precocious puberty of the ovarian type is to be differentiated from precocious menstruation, which is of more frequent occurrence and is not accompanied by the general changes of puberty.

Testicular type: one instance of testicular neoplasm as the causative factor in pubertas precox is that of a boy who first presented symptoms at the age of five years. Removal of a carcinoma of the left testicle at the age of nine years was followed by a recession of all signs and a reversion to the childhood type.

Every child is an individual and for that reason often is a vexatious problem. Any departure from normal development, however, any speeding or slowing of the process, any aberration in conduct deserves serious consideration from a diagnostic standpoint. In the great majority of abnormal children it is impossible to lay the blame upon any single gland. The endocrine glands are only apparently independent organs. Actually they form a system of relationships which is but vaguely understood and so is rather consistently baffling. The consequences of imperfect functioning are not easily detected as is any trouble with the exocrine glands. Unfortunately, the endocrine glands are menaced constantly by accident and disease. The infectious diseases of childhood, at whatever age they appear, have a decidedly important bearing on the growth and development of the child, as it approaches adolescence. The danger in these more or less common ailments is entirely out of proportion to the attention which they ordinarily receive. In practically every case of infection there is an elevation of temperature; fever affects the entire organic structure. The higher the fever and the longer the attack, the greater the probable and perhaps permanent damage. When the whole body of the child is subjected to internal heat, it is a logical conclusion that the delicate and highly specialized glandular organs, placed for protection deep within the body, may be first and most extensively harmed. In the condition of cryptorchidism sterility is present. The cause was long sought, because in other respects gland action was normal. It was ultimately discovered that the sex cells are quickly affected by heat. Even the slight increase in temperature borne by the imprisoned cells of the undescended testes, is enough to make them sterile. The tissues of the ductless glands are highly specialized; they therefore probably cannot withstand assaults like tissue which has no special function. If they are damaged and scar tissue is formed, the entire endocrine system is in a state of imbalance. When one infectious disease follows on the heels of another, in rapid succession, with only a short time between for recuperation, the destruction is much greater. The real damage of infancy and childhood fevers may not be observed for several years, when the ancient cause of a present trouble will probably have been forgotten. Prevention of the infectious diseases of childhood will go far toward checking the ever mounting number of physical and mental defectives.

In the treatment of perverted glandular functioning in children, sometimes spectacular results are obtained by feeding glandular substances, but great care should be used in their administration. If done inaccurately or unwisely, on the chance that a brilliant therapeutic success may obtain, the actual result may be a further imbalance of the glands. Furthermore, puberty has a tendency to correct many of the minor deficiencies, as a general rearrangement of the function from growth to maturity tends toward normalization.

"*California and Western Medicine* for January, 1935, contained the following statements: "Thus far the main criticisms of the present enthusiastic use of 'hormones' in clinical medicine have been based on lack of knowledge as to the nature, function, and interrelationship of normal internal secretions, and on fear of causing undesirable perversions of existing endocrine functions. The Council on Pharmacy and Chemistry of the American Medical Association, for example, recently warned clinicians against overenthusiasm in its statement that 'clinical use—has kept far ahead of laboratory data'! The Council, however, failed to emphasize the fact that many available laboratory data, suggesting limitations and dangers in endocrine therapy, are apparently unknown or ignored in practical clinical therapy.

"Among laboratory data of this type none is of more fundamental clinical importance than the evidence that all therapeutic 'hormones' and endocrine products thus far adequately tested are specifically antigenic for laboratory animals, i.e., capable of stimulating the production of apparently specific antihormonal immunities. Hormonal antigenicity, for instance, was reported six years ago by Doctors Sahyun and Blatherwick,† who found that repeated injections of insulin into rabbits soon render these animals highly refractory to insulin therapy, and that their insulin-immune rabbits were often able to withstand intraperitoneal injections of from thirty to fifty times the minimum lethal dose of insulin for normal rabbits.

"In rats receiving repeated implants of hypophyseal tissue, Doctor Collip‡ and his associates of McGill University, have more recently demonstrated a specific antihypophyseal immunity sufficient to render the animals refractory to one hundred times the normal therapeutic dose of the thyrotropic hormone. In these immune rats the normal metabolic rate was often decreased from 20 to 40 per cent, approximately to the level of control hypophysectomized rats. This is apparently due to an immunological vicious circle, completely inhibiting or inactivating the animals' own hypophyseal function.

"That such vicious circles are due to circulating antibodies is shown by the fact that normal rats can be passively immunized against multitherapeutic doses of the thyrotropic hormone, and even against their own hypophyseal internal secretion, by a serum transfer from an hypophysis-immune rat."

At the present time, osteopathy offers more hope in the treatment of glandular dysfunctions than does any other system of therapy. Accurate records are being kept as to results of (1) administration of glandular extracts, (2) administration of glandular extracts plus osteopathic manipula-

†Sahyun, M. and Blatherwick, N. R.: Physiological Response of Rabbits to Insulin. Jour. Biol. Chem., 1928 (Oct.) 79:443-460.

‡Collip, J. B.: Some Recent Advances in Physiology of Anterior Pituitary. Jour. Mt. Sinai Hospital, 1934 (May-June) 1:28-71.

tive treatment, (3) osteopathic manipulative treatment alone.

The following conclusions were reached by Dr. Q. W. Wilson in an article in *The Journal of Osteopathy*: "We have proved definitely that osteopathy will stimulate the growth of adolescent children suffering from glandular diseases. It also increases the mentality and changes the personality. X-ray pictures were taken to verify the advance in carpal development . . . Bone age is a reliable index to the metabolic speed in childhood. Metabolic speed is consistently and rapidly increased by osteopathic treatment."

Dr. C. B. Sturgess has these remarks to make in the JOURNAL OF THE A.O.A.: "Pathology in the glands of internal secretion within the skull and in the neck, namely, the pituitary, pineal, parathyroid and thyroid, can often be traced to lesions in the cervical and upper dorsal areas. Innervation and control is chiefly through the sympathetic chain and ganglia. The spinal area of control to the pancreas is located at about the tenth dorsal; the adrenals from the tenth dorsal to second lumbar; the ovaries [and testes] from the third to fifth lumbar . . . It is therefore quite evident that osseous lesions must be considered . . . in determining . . . endocrine disturbances."

So much for juvenile endocrinology of today! Much remains to be learned. There are many gaps in our knowledge of endocrine physiology and pathology in the prepuberal years—mainly because laboratory young animals are not wholly satisfactory experimental material, and therefore the fundamental studies upon which endocrine advancement largely depends have been made mostly upon adult animals. Enough is known to suggest strongly that the younger subjects are importantly different from the older in their endocrine status, but details are lacking. To the pediatrician, endocrinology is of especial importance, because to a large extent, the individual is marked for life in his prepuberal years. Let us, therefore, treat our cases of suspected juvenile endocrinopathies osteopathically, using to the best of our ability our knowledge of the principles of our profession, knowing within ourselves that we are giving the individual the best chance for normalcy that is offered by science today.

5514 Oak St.

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Osteopathy on the Air

Educational health programs approved by the Committee on Public and Professional Welfare of the A.O.A. are being broadcast weekly over the following stations:

WAAF—920 kilocycles, Chicago, Wednesdays, 1:35 p.m., Chicago Osteopathic Society.

KFKA—880 kilocycles, Greeley, Colo., Wednesdays, 4:45 p.m., Colorado Osteopathic Association.

KIUL—1210 kilocycles, Garden City, Kans., Wednesdays, 11:15 a.m., Kansas Osteopathic Association.

KHBG—1210 kilocycles, Okmulgee, Okla., Sundays, 3:15 p.m., Eastern & Central Oklahoma Osteopathic Association.

WMAZ—1180 kilocycles, Macon, Ga., Thursdays, 10:45 a.m., Georgia Osteopathic Association.

Case Histories

TAPLIN REDUCTION OF VERTEBRAL FRACTURE*

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Probably man's greatest deterrent against trying something different is fear lest he will fail and be held up to ridicule before his fellows. Our profession, by its birth, should be well accustomed to doing the out-of-the-ordinary thing, although it is feared in many quarters that we are becoming so well entrenched, and so content with our lot as possibly to forget our birthright. Therapeutically we have a weapon in osteopathic manipulation which far outstrips anything internal medication offers. It is knowledge of this fact, and pride in it, that have led us to believe that we could improve upon the methods of manipulation and treatment of spinal fractures used in other circles. For this purpose we have used an osteopathic instrument, the Taplin table, which has enabled us to control and graduate the forces needed with greater precision than is possible under ordinary procedure. We present herewith in brief a case which we believe bears out this confidence and trust in things osteopathic.

Woman, aged 48 years, white, housekeeper, fell from a six-foot stepladder March 9, 1937, landing in a sitting position with immediate onset of severe pain at the lumbodorsal junction. She was unable to sustain her weight in a standing or sitting position. The local M.D. was called and sedatives administered, but after two days the patient, being unsatisfied with the diagnosis of "only a sprained back," called the local D.O. His advice was immediate x-ray; he suspected fractured vertebrae. She was taken to the Philadelphia Osteopathic Hospital for roentgen study but because there were no rooms available there, she was transferred to the Gedney Osteopathic Hospital March 11, 1937.

An exerpt from the x-ray report follows: "Crushed fracture involving the eleventh dorsal body, with some evidence pointing toward fractured disc, with propulsion and herniation into the twelfth dorsal vertebra—some demineralization and thinning out of bone structure is apparent."

We decided to observe the condition for 48 hours to note any untoward cord symptoms, or other signs which might have complicated the case, before attempting any active manipulation or corrective measure.

Physical examination showed a well-nourished female, weight about 120 pounds, face drawn and haggard from fatigue and pain, blood pressure systolic 140, diastolic 90. The chest and abdomen were normal except for poor heart muscle tone and a low abdominal incisional scar. Her knees were flexed for comfort, and she was moved with great care because of spasmodic pain set up in the lumbar and lumbodorsal spinal regions which radiated around into the abdomen, into the gluteal regions, and into the thighs bilaterally.

Examination of the back showed general contractions of the spinal musculature extending from the third lumbar up through, and including, the entire thoracic region with a condition of flexion from the tenth thoracic to the first lumbar with spinous processes separated beyond the normal width at these points. Marked tenderness was elicited over the transverse processes of the eleventh and twelfth thoracics, and pressure at these points aggravated her pain.

The only pertinent information gained from her history was of a chronic rheumatic condition in childhood with chronic sore throat, a hemorrhoidectomy at 40 years of age with uneventful recovery, the removal

*Read before the Osteopathic Clinical Society.

of a nonmalignant left breast tumor at 44 years of age, and the removal of the generative pelvic viscera at 46 years of age. Since the last operation she has had the usual "hot flashes" accompanying surgical menopause. She had two normal pregnancies with normal deliveries. The children died, at 3½ and 2½ years, of tuberculous peritonitis. Occasional urine analyses had given normal readings, and though the patient was constipated, taking cathartics two or three times weekly, she has had no gastrointestinal embarrassment except slight flatulence.

At this time the blood count was relatively normal, and no spinal puncture was attempted. It is interesting to note that though previous analyses had shown the urine to be normal, it now had a specific gravity of 1.030, a pH of 4.8, albumin 2 plus, 15-20 pus cells, and 2-3 hyaline and granular casts per high power field, perhaps because of fracture irritation at this location.

Her pain was alleviated by the free use of hot wet packs, applied for twenty minutes every two hours, occasional sedatives (morphine sulphate gr. ¼ with atropine sulphate gr. 1/150, phenobarbital gr. 1½), every four hours when needed and mild relaxing manipulative treatment, the direction of the forces being applied over the spinal musculature at right angles to the spine, with the patient supine, care being taken not to articulate but merely to oppose muscle spasm and thereby produce relaxation. This routine was successful, and she was prepared for reduction on March 13, 1937, four days following the accident, when the symptoms of congestion and perineural irritation had begun to subside.

She was prepared for reduction under local analgesia, so the skin over the spinal area, fifth thoracic to fifth lumbar, was shaved covering a rectangle extending four inches each way from the midline, and morphine sulphate gr. ¼ with atropine sulphate gr. 1/150 was given subcutaneously one hour before the operation. On the operating table the shaved area was antisepticized and novocaine 2 per cent was injected paraspinally with a two-inch needle, at the same time withdrawing the plunger, searching for an area of hemorrhagic extravasation which was found at the eleventh and twelfth thoracic segments between the left transverse processes. Into this area there was immediately infiltrated 30 cc. of solution; a total of 60 cc. of the 2 per cent solution was used bilaterally from the tenth thoracic to the second lumbar segments.

The patient was transferred to the Taplin table, its cushion having been previously reduced to 50 per cent of normal inflation and the usual type of force as described by Dr. George Taplin for general treatment applied over the fractured area as well as above and below it, i.e., a force applied through the agency of the "mobilizer" and delivered at right angles to the spine at that point. In fracture we have delivered the force symmetrically bilateral and directly over the entire involved vertebra with the fingers of the free hand interposed to detect changing anatomic relationships. Compression force was carried to the limit of normal motion, directly over the eleventh and twelfth vertabrae, and it was thought that some reduction could be felt taking place.

In this way it was thought that not only could the fracture area be restored to as nearly normal as possible, but also the osteopathic spinal pathology concurrent with the fracture trauma above and below the eleventh and twelfth thoracics would be brought to a more nearly normal relationship with less sequelae than that obtainable with extension cast application alone or by manipulation with the unaided hands.

While the complete extension was maintained, two assistants took the patient and suitably suspended her while an encircling body cast from axilla to thigh was applied, leaving an abdominal window. The cast was made very strong, using eighteen 6-inch J. & J. plaster of Paris bandages, having padded the trunk in the usual manner with stockinette, sheet wadding and felt to prevent pressure sores.

Her recovery was uneventful. She had felt no pain during the reduction and developed no cast sores. For several days sedatives were required for localized fracture pain. After one week she had no pain on deep palpation over the involved area and no referred pain. Digestion was normal and elimination was encouraged with enemata when necessary.

On March 14, 1937, the urine had shown some improvement, and on March 26 it was normal.

Daily osteopathic manipulative treatment was administered by application of the palmar surface of the manipulating hand to the skin alternately on either side of the spine as high as possible under the cast, using the terminal third of the fingers to gain the desired forces. The range of treatment increased from day to day as the cast became more free.

She was allowed freedom of position in bed after twenty-four hours, and aside from the "hot flashes" of menopausal origin she had no complaints. Menopausal symptoms were controlled by bi-weekly injections of Progynon, 10,000 international units. She was allowed up in bed, sitting with feet off the side after ten days and out of bed after twenty-one days.

On the forty-second day the original cast was removed and the patient x-rayed. An encouraging report was received, from which the following is an exerpt: "Recent compression or crush fracture involving the eleventh dorsal vertebra, with film at this time demonstrating reduction of considerable deformity in the body and a general improvement as regards the appearance of involved vertebral structures—condensation of bone noted in the involved body is probably due to healing—propulsion or rupture of the eleventh dorsal disc, affecting contour and appearance of the superior portion of the twelfth dorsal body which tends to display minimal degree of compression—I am most happy to render favorable report in her case."

On April 27, 1937, a new cast was applied, much smaller and lighter, designed to keep her in extension but give her more arm freedom, and in general much more pleasing to her aesthetic senses. She wore this for about one month. A modified Taylor brace was then fitted which she still wears, but will soon discard.

At present writing she has no pain of spinal origin. There is some inconvenience due to the brace, but she carries on her normal daily routine with all the zest of former times.

Our observations in this case have been as follows: (1) An hitherto unused osteopathic tool has shown its efficacy in treatment of fractured vertebral bodies. (2) The renal picture has again borne out the osteopathic concept. (3) Postoperative osteopathic treatment was efficacious in contributing to the patient's recovery.

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Attention is invited to abandoned practices and to ideas that, seemingly substantial a few years ago, are now understood far better. This is the way of medical science. When the old has been disproved unimpeachably, it is imperative to discard it and adopt the new, even, sometimes, on little more than an empirical basis. Promising empirical medicine is far better than useless and unprovable medicine. The story of digitalis bears this out. In this respect, however, it is important to call attention to the fact that modern medicine adopts the new with far more scrutiny and suspicion than it did fifteen, and even ten, years ago. This is healthy growth because it places a check on the overenthusiastic and sometimees careless innovator. From the Supplement to the Practitioners Library of Medicine and Surgery, preface page vii, D. Appleton-Century Co., New York, 1938.

Communications

To the Editor:

In reply to your request concerning your editorial [page 519, this issue] I would suggest, possibly, that there is a difference in the details of the treatment of cases of poliomyelitis which should be elaborated upon. It strikes me that there is a failure on the part of the profession to realize the difference between a cast in which a paralyzed limb is incorporated to prevent the fatigue and stretching of the groups of paralyzed muscles, and a cast which is used to splint a fractured bone. Whether one uses a cast of wood or metal frame, it makes little difference. The object of such protection is not only to prevent stretching of the paralyzed muscles, due to the weight of the bed clothes, where the anterior tibial group is involved, or the weight of the arm and forearm in cases of paralysis of the deltoid group, but also to prevent the pull of the strong unaffected antagonistic group of muscles. It is understandable how a continued contraction of the unaffected group of muscles not only stretches and fatigues the paralyzed group, but at the same time causes pain due to spasms in the normal group because of a lack of antagonistic pull in the paralyzed group. If these paralyzed limbs are placed in some supporting mechanism and then allowed to rest upon a soft bed of cotton, there can be no doubt but that this adds much to the patient's comfort, and does much to prevent deformity. It is a well-known fact that no muscle is ever completely paralyzed in the case of "polio," and in most instances retains its minimal contractive force.

There are numerous cases on record where the child has demonstrated, following the attack, the ability to move the affected part of the body with a muscle which has been involved and partially paralyzed, and through continued use of the paralyzed muscle for the purpose of demonstrating the improvement which has been attained, to so fatigue the muscle that it completely loses its contractive force. It is in this type of case that we usually see residual paralysis and severe deformity.

If a cast is used, it should be bi-valved in order that the limb may be taken out of the cast and massaged, put through passive motion, or any other physiotherapeutical measure which will improve the circulation of the limb. In the interval between such treatment, however, it is essential, in my judgment, that the affected muscles should be protected against fatigue, even after muscle re-education has begun. This calls for, of course, the intelligent application of braces, the use of crutches, etc., until the paralyzed muscle has regained its normal power.

It is my firm belief that many of us in our enthusiasm to help a case of poliomyelitis overexercise and overmanipulate paralyzed muscles and eventually do more harm than good. In the light of my experience in the treatment of this disease, adequate protection of the paralyzed group would be my first consideration. Splinting or protection of these groups would be of such a character that the limb could rest upon a soft bed of cotton and only passive motion would be used until the pain and hyperesthesia of the paralyzed muscles had completely disappeared. It goes without saying that relaxation of the spinal vertebrae as soon as the patient's muscles will tolerate such treatment, is advisable, since it doubtlessly aids and assists in drainage and reducing the inflammation of the spinal cord.

Not enough has been said about the diagnosis of poliomyelitis prior to the onset of paralysis, and it is my opinion that no article on the subject should ever be written without again recalling to the minds of the profession the importance of the *spine sign** as a positive diagnostic aid in the preparalytic stage of anterior poliomyelitis.

Although, no one is absolutely sure relative to the value of the use of human serum in the preparalytic stage of the disease, one thing is definitely certain, that it is of absolutely no value after the paralysis has made its appearance. It is therefore evident that the value of the *spine sign* in making the diagnosis prior to the advent of paralysis is paramount, if the patient is to have the benefit of this particular type of treatment.

I am wondering if some of the cases reported in the newspapers, as well as by members of our profession, are not those cases in which there has been only slight damage to the nervous tissue in the anterior columns of the cord, cases in which the virulence of the organism or the severity of inflammatory process is mild and after this inflammatory process subsides, the normal nervous impulses again pass through anterior columns of the cord and the muscle regains its nerve supply, and the individual makes an uneventful recovery irrespective of the type of treatment used.

In many of the epidemics in the United States for the past several years, only a small percentage of the children suffering with the disease showed any signs of residual paralysis. Although I have not investigated the matter recently, it is my impression that not over 15 per cent of the cases reported showed any signs of residual paralysis. What is true of epidemic poliomyelitis is doubtless true of endemic cases, and I believe for that reason that we should be perfectly honest with ourselves and the public, not assuming too much credit for our system of therapy until we have some evidence that in a given epidemic the osteopathic method of handling these cases has shown a greater percentage of complete recoveries than has the orthodox method.

I am inclined to agree with Wilson that many of these cases have had some sort of injury or shock which becomes a predisposing factor that makes the child more susceptible to the disease. There is this, however, which we must carefully consider, that the osteopathic profession has as much, if not more right to assume that the osteopathic spinal lesion is the primary predisposing cause to poliomyelitis than any other theory which has been advanced thus far.

Since no other animal outside of man, except the monkey, is susceptible to the disease, we must assume that the disease is in some manner related to the erect posture. Whether this is due to the higher development of the nervous system because of the necessity for further and more minute coordination to maintain the erect posture, or whether it is due to muscular imbalance makes little or no difference. The fact remains that certain muscles have, of necessity, undergone a very definite evolutionary change in both man and monkey as a result of the assumption of the erect posture. It is these groups of muscles which are called upon to carry out a new function that are first lost when the body is weakened by disease. It is good reasoning to assume, also, that in assuming the erect posture, it is necessary to carefully balance one vertebra upon another by muscular action, and it is because of muscular imbalance that immobility is created in the various vertebral joints. Consequently, the osteopathic lesions, or some postural defects, predispose to the disease poliomyelitis.

I would suggest that in your editorial you, at least, mention the *spine sign* and describe it as one of the things which the physician should be looking for at this time of the year. I would suggest that you be very definite in advising the profession to protect paralyzed muscles against fatigue and stretching. Further, that it be advised as to the difference between a cast used to protect paralyzed muscles and one used in the treatment of a fracture. The importance which fatigue plays in the production of residual or permanent paralysis, and the advisability of a prophylactic measure against the disease during an epidemic of every child having a spinal examination and the correction of any osteopathic spinal lesions as the most scientific and intelligent method known to medicine today, should be emphasized.

(Signed) HOWARD E. LAMB, D.O.
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*Spine Sign: A voluntary disinclination to flex the spine anteriorly because of pain. To determine whether the spine sign is present, the child is held comfortably and asked to kiss his knee. One frequently sees him commence in good faith and give up the attempt because of pain, and no bribing will persuade him to complete the flexion of the spine if the sign is present. In babies one has frequently to rely on passive flexion to estimate whether pain is caused by the movement. —from "Poliomyelitis and Its Sequalae" by Howard Lamb, D.O., Jour. Am. Osteo. Assn., 1932 (Mar.) 31:245-250.

Current Medical Literature

Abstracted by R. E. Duffell, D.O.

Technic of Administering Zinc Sulphate Solution as Prophylactic Agent in Poliomyelitis

Dr. R. Sterling Pentecost, otolaryngologist, Toronto Western Hospital and Christie St. Hospital, Toronto, undertook a series of experiments last year to ascertain if possible the simplest, quickest, and safest method of introducing a 1 per cent solution of zinc sulphate to the olfactory area of the noses of humans for the purpose of protection against poliomyelitis. He found that complete covering of the olfactory area is not obtained in the majority of patients by either dropping the solution in the nose with the head lowered, or by ordinary spraying. The most reliable method is outlined as follows by Dr. Pentecost in the *Canadian Public Health Journal* for October, 1937:

"The instruments required are a head mirror, a nasal speculum, a 1 cc. syringe, and a 4-inch olive-tipped catheter in three sizes, No. 4 (French) for children under seven years of age, No. 5 for children seven to fourteen years, and No. 6 for those fourteen years and older.

"The catheters used by the author were the x-ray-opaque ureteral catheters. We suggest that catheters of a similar size be specially manufactured for this purpose with one eye at the tip and impregnated with metallic particles sufficient to make them stiff enough for rapid introduction yet sufficiently flexible to avoid possible injury to the nasal structures.

"The nasal mucous membranes are partially anesthetized and shrunk by spraying the nose with an ordinary atomizer containing 0.25 per cent Pontocaine and 0.25 per cent ephedrine solution. This is done by a nurse or an attendant five minutes prior to the application. The patient is placed in the dorsal recumbent position with the head extended so that a line drawn from the external auditory meatus to the chin is in a vertical plane. The syringe is filled with 0.5 cc. of the solution and attached to the catheter by means of a ureter catheter adapter. The olive tip of the catheter is inserted between the upper third of the middle turbinate and the nasal septum for a distance of about one-half inch. The solution is thus expelled directly on the olfactory area. The head is maintained in the extended position for approximately one minute. The patient is then raised to a sitting position and requested to snuff up the nose and expectorate the surplus solution."

Anosmia follows immediately after the injection in 100 per cent of the cases and persists for at least five days. Headache occurs and persists from two to six hours. All patients complain of a stuffy nose and a feeling of constriction between the eyes from six to twelve hours. All patients usually are symptom-free in twelve hours.

Tests With a Single Dose of Precipitated Pertussis Vaccine

A commercially prepared pertussis vaccine was precipitated with alum and the precipitate resuspended in saline solution to its original volume. One dose of 1 cc. of this suspension was given to each of 82 children who, together with a similar group of 109 unvaccinated children, were subsequently observed for 1 year, to study the possible value of this vaccine in preventing or modifying cases of clinical pertussis.

The observation revealed that reactions following injection of the vaccine were negligible; that the incidence of clinical pertussis in the vaccinated group (12 per cent) was lower than in the unvaccinated group (19 per cent); and that of the total 31 cases occurring in both groups, the cases in the vaccinated group showed a preponderance of mild and a sparsity of severe attacks. These observed differences between the two groups are in no way convincing from a statistical standpoint and do not permit the conclusion that this vaccine had any prophylactic value for prevention or modification of clinical pertussis. At best, the differences suggest that the vaccine might have some prophylactic value, too little, however, to be demonstrated as real in the small group of this preliminary study. — From United States Treasury Department *Public Health Reports*, Volume 53, Number 20; May 20, 1938, pages 795-796.

Current Osteopathic Literature

Abstracted by R. E. Duffell, D.O.

THE COLLEGE JOURNAL
KANSAS CITY COLLEGE OF OSTEOPATHY AND SURGERY
KANSAS CITY, MO.
22:33-64 (April), 1938

The Reticulo-Endothelial System. Byron Laycock, D.O., Kansas City, Mo.—p. 35.
The "Hypo." George J. Conley, D.O., Kansas City, Mo.—p. 40.
Differential Diagnosis. G. N. Gillum, D.O., Kansas City, Mo.—p. 42.
Ask Health Care to All. George J. Conley, D.O., Kansas City, Mo.—p. 43.
Interesting News from the 1927 Year Book—Dermatology. Annie G. Hedges, D.O., Kansas City, Mo.—p. 45.
The Debt We Owe. George J. Conley, D.O., Kansas City, Mo.—p. 51.
A Report on Fetal Fatalities in the Toxemias. Alvin Reith, D.O., Kansas City, Mo.—p. 56.
*Gastrointestinal Diseases of Childhood. James M. Watson, D.O., Los Angeles, Calif.—p. 57.

***Gastrointestinal Diseases of Childhood.**—In this article Watson discusses particularly congenital pyloric stenosis and acute intestinal intoxication. Simple pyloric spasm can be differentiated from pyloric stenosis by means of the x-ray and the use of atropine. In the former atropine will relax the sphincter while in the latter it has little effect. The three cardinal symptoms of congenital pyloric stenosis are: projectile vomiting, visible gastric peristalsis, and palpable tumor, to which should be added perhaps "starvation" stools. All of these signs, however, may occur in conditions other than pyloric stenosis, such as in intussusception, atresia, tresia of the duodenum or esophagus, intracranial pathology (tumor and meningitis).

In suspected cases of congenital pyloric stenosis, the author says that it is better to proceed slowly in making the diagnosis, in the meantime preventing dehydration by administering fluids by antravenous drip, with 5 per cent glucose in normal salt, Ringer's or Hartman's solution, or by hypodermoclysis or even intraperitoneally. A transfusion may be given using citrated blood. Thus nutrition may be maintained until a diagnosis has been made. By this treatment the infant is also better prepared for surgery if necessary.

Acute intestinal intoxication is characterized by severe vomiting, severe diarrhea, severe toxemia and fever. In typical cases the infant is overly active and restless at first. Then it becomes somnolent and lies with its eyes half open; eyeballs are sunken and rolled back; it may be aroused but sinks back into its lethargic state; extremities are cold and cyanotic; respirations are rapid and deep. This state is not reached suddenly. Usually the infant has been ill with fever or with gastroenteric symptoms for several days or a week before the onset of these symptoms.

One of the most common causes of acute intestinal intoxication is food contaminated with pathogenic and nonpathogenic bacteria. The gastrointestinal tract may become infected also by way of the blood stream and lymphatics following a severe nasopharyngitis, otitis media, or mastoiditis. The streptococcus, pneumococcus, staphylococcus have been found to be the infective agents in many cases. Even the *Endameba coli* and *histolytica* have been found in a few cases.

Treatment should be directed to eliminating the cause of the infection while at the same time maintaining the infant's nutrition. The most important feature of the condition is anhydremia. This is, of course, the result of vomiting and diarrhea. Such a state should be anticipated and adequate fluids administered subcutaneously, intraperitoneally, and intravenously (the last named preferably by the drip method). After vomiting has ceased, some food may be given by mouth. Watson starts his patients off with 5 per cent glucose, carefully stepping it up in both

amount and concentration, watching carefully for any indication of increase in diarrhea which is a signal for reduction of glucose intake or stopping it altogether. This is followed by Dryco fortified with Casec and later by boiled skimmed milk with Casec or buttermilk. A preparation which is especially satisfactory in the diarrheas is composed of 175 grams Dextri-Maltose No. 1, 6 grams of pectin and 8 grams of agar-agar. These ingredients are titrated together to form a powder which can be dissolved in a liter of water. A thin jell is the result which is relished by the infant and can be taken through the nipple of a bottle.

Since a deficiency of vitamins and minerals, particularly vitamin D and calcium and phosphorus, predisposes to gastrointestinal disturbances, this lack in the diet must be made up to prevent further illness.

OSTEOPATHIC DIGEST
PHILADELPHIA
11: No. 4 (April), 1938

Facts About the O. J. Snyder Foundation. Hon. Ira W. Drew, D.O., Washington, D. C.—p. 3.
Dr. Harry M. Goehring.—p. 4.
William Mather Lewis to be Commencement Speaker.—p. 5.
*Scientific Supplement: Allergy in the Gastrointestinal Tract, the Cardiovascular System, and in Migraine. William F. Daiber, D.O., Philadelphia.—p. 7.

***Allergy in the Gastrointestinal Tract, the Cardiovascular System, and in Migraine.**—Daiber says that the manifestations of food allergy may appear in any of the bodily tissues, but most often involve the gastrointestinal tract. The mechanism concerned is that of protein shock to the gastrointestinal mucosa with resulting smooth muscle spasm or a local edema due to increased capillary permeability. Symptoms may be canker sore, glossitis, stomatitis, belching anorexia, indigestion, pylorospasm (in infants), pain simulating cholecystitis and appendicitis, proctitis and pruritus ani.

Food allergy should be suspected in a patient who has an allergic familial history. After excluding organic disease, skin tests should be performed to determine the suspected foods. Blood counts taken before and after ingestion of suspected or known allergic foods reveal a leukopenia and in increase in eosinophiles.

Trial or elimination diets have been used successfully. A diet is provided which does not produce symptoms and to this are added other items, one by one. Appearance of symptoms following the addition of any such item brands that food as an offender. Wheat, milk, and egg are the most common offenders.

The relationship of certain kinds of food to the production of cardiovascular disturbance is well known. The ingestion of cocoa, for instance, by some allergic persons will cause extrasystoles and tachycardia. Daiber reports the work of Gray on allergy and essential hypertension. Gray found that wheat, pork, milk, egg, potato, and spinach, in the order named, were most frequently the actual factors in the maintenance of hypertension, in a series of twenty cases. All of these patients were treated by determining the food harmful to them and avoiding it. In nineteen the blood pressure was reduced to an average of 140 systolic and 80 diastolic. Other investigators have found that tobacco allergy affects the smooth muscles of the arterial system.

Of all the theories concerning migraine, Daiber says that "the most logical and tenable is the combination of the vegetative nervous system theory and the allergic theory. This theory presupposes that localization and specificity of cellular sensitization in the cerebral cortex is present." In the treatment of migraine on this theory, all foods which give a positive reaction on skin testing are omitted from the dietary, or a patient may start on a trial diet eliminating first wheat, then egg, then milk.

Daiber comments that "While the osteopathic spinal lesion is probably never a primary and sole cause of true migraine, it undoubtedly is one of the most powerful etiologic factors listed under secondary or exciting causes." He suggests that in those cases in which osteopathic manipulation has afforded relief but not cure, attention should be directed to the allergic element.

JOURNAL OF OSTEOPATHY
KIRKSVILLE, MO.
45: No. 4 (April), 1938

Editorials: Postgraduate Course. American Osteopathic Association Convention. Student Recruiting. George M. Laughlin, D.O., Kirksville, Mo.—p. 11.
To the Alumni of the Kirksville College. Harry L. Chiles, D.O., Orange, N. J.—p. 13.
Case Reports: Tic Douloureux. Polycystic Kidney. George M. Laughlin, D.O., and Earl H. Laughlin, Jr., D.O., Kirksville, Mo.—p. 14.
The Blood Cures. Wilborn J. Deason, M.S., D.O., Chicago.—p. 16.
A Reminiscence. Frank C. Farmer, D.O., Los Angeles.—p. 18.
Vitamins—A Food? A Medicine? A Racket? Which! Wallace M. Pearson, A.B., B.Sc., D.O., Kirksville, Mo.—p. 21.
Common Pelvic Disorders. Margaret Jones, D.O., Kansas City, Mo.—p. 23.
The Diagnosis of Pulmonary Tuberculosis. A. R. Fuller, D.O., Kirksville, Mo.—p. 26.

JOURNAL OF
OSTEOPATHIC OPHTHALMOLOGY, RHINOLOGY AND OTOLARYNGOLOGY
BETHLEHEM, PA.
20: No. 1 (Jan.-Feb.-Mar.), 1938

Editorials: A. G. Walmsley, D.O., Bethlehem, Pa.—p. 3.
Tentative Program, American Osteopathic Society of Ophthalmology and Otolaryngology.—p. 5.
Laryngeal Cancer. J. Ernest Leuzinger, D.O., Philadelphia.—p. 9.
*Glossosemeiotics. H. R. Peterson, D.O., Wichita Falls, Tex.—p. 15.
Tentative Program, International Society of Osteopathic Ophthalmology and Otolaryngology.—p. 20.
The Oncoming Convention. Davis S. Cowherd, D.O., Kansas City, Mo.—p. 21.
Multum in Parvo. T. J. Ruddy, D.O., F.I.S.O., Los Angeles.—p. 23.
Hayfever Is Due to One Cause which is a Combination of Three Factors. C. C. Reid, D.O., Denver.—p. 25.
Mastoiditis. Verne J. Wilson, Des Moines, Iowa.—p. 26.
Round Table Discussions.—p. 35.

***Glossosemeiotics.**—Glossosemeiotics is defined as "the diagnostic and prognostic signs exhibited by the tongue." Peterson says that the size, color, and markings of the tongue, except in two or three diseases, serve as an index to the constitutional state of the individual rather than a true state of individual disease. He takes up in turn the diagnostic significance of the various types of tongue.

Dry tongue, which may also be a white tongue, may denote anuria from the use of drugs such as atropine; it may result from dehydration following surgery, prolonged vomiting and diarrhea, starvation, fear, kidney disease, diabetic coma.

Thick large tongue may indicate hypothyroidism, myxedema, acromegaly, or mongolism.

Large pale tongue with teeth indentations on its sides is a strong indication of gastrointestinal disorders.

Smooth slick and red tongue may indicate pernicious anemia, pellagra, sprue, when framed in a mouth surrounded by a pale, pasty face. The red tongue may be found also in the diabetic or in the person suffering with polynephrosis, but the blood count and urinalysis will be different from that found in the primary anemias.

In elderly patients lack of hydrochloric acid in the stomach may produce the red tongue. In individuals under forty the red, highly mottled tongue may indicate a low pH of the bodily tissues, in other words a relatively high acidity.

The furred coated tongue may be found as a result of chronic alcoholism, cirrhosis, acute liver congestion, dental caries, trench mouth, fevers, gastritis, peritonitis, appendicitis, pneumonia, septicemia, typhoid fever, influenza, and serum administration. However, this type of tongue may be natural for the person whose tongue has long papillae and who uses considerable tobacco or coffee,

or one who is a mouth breather, regardless of disturbed body chemistry.

The occasional black tongue is caused by a specific mold and requires special treatment. The near black tongue may indicate disturbed portal circulation as a result of valvular heart disease.

Sores on the tongue may result from pellagra, syphilis, scarlet fever, diabetes, stomatitis, angioneurotic edema (Ludwig's angina).

Swollen tongue may result from a bee sting in another part of the body, from infection in the salivary glands, and from injuries.

Patches on the tongue may be the result of eczema and pigmentation, a symptom of Addison's or Raynaud's disease, or psoriasis.

Book Notices

THE COST OF ADEQUATE MEDICAL CARE. By Samuel Bradbury, M.D. Cloth. Pp. 86. Price $1.00. University of Chicago Press, 58th St. and Ellis Ave., Chicago.

This little book is valuable to all those interested in the economics of the practice of medicine. It is full of tables covering distribution of the physician's time, income from the various services rendered by physicians, and all the other data, which those really interested in the present trend in economics may find useful.

The author endeavors to discover how much adequate medical care would cost on the basis of the present-day private practice of medicine and how such costs would be divided among general practitioners, specialists, hospitals, and the various other services involved.

R. C. Mc.

PHYSICIANS AND MEDICAL CARE. By Esther Lucile Brown, Department of Statistics, Russell Sage Foundation. Cloth. Pp. 201. Price $0.75. Russell Sage Foundation, 130 E. 22nd St., New York, 1937.

This little book has to do with medical education and various other aspects of the profession of the healing art. There are discussions of maternal mortality, distribution of physicians, cost of medical education, income of physicians, etc.

Criticism of medical education in the United States is brief, but severe.

R. C. Mc.

INJECTION TREATMENT OF HERNIA. By Carl O. Rice, M.D., F.A.C.S.; Instructor in Surgery, University of Minnesota School of Medicine and Surgeon in Charge of the Surgical Out-Patient Department of the Minnesota General Hospital, with the assistance and cooperation of Hamlin Mattson, M.D. Cloth. Pp. 266 with 83 illustrations. Price, $4.50. F. A. Davis Co., 1914 Cherry Street, Philadelphia, 1937.

The author sketches the history of the injection treatment of hernia from the time before the days of antiseptic surgery when the method is said to have enjoyed a deserved popularity and to have been practiced by a number of ethical and scientifically minded physicians. He marvels at the fact that for half a century or more this method of treatment was practically discarded by the medical profession and little or no literature published regarding it. In this book he gives us the classification of herniae, the anatomy of the abdominal wall in relation to the various types of hernia, the etiology of hernia, diagnosis and differential features of hernia, the truss, treatment of hernia by the injection method, complications and sequelae, results associated with the injection treatment of hernia, histopathology of the injection treatment of hernia, medico-legal aspects of hernia. The book includes a comprehensive bibliography.

THE DIARY OF A SURGEON IN THE YEAR 1751-1752. By John Knyveton, Licentiate of the Society of Apothecaries; Doctor of Medicine of the University of Aberdeen; Teacher of Midwifery and Man Mid-Wife in Infirmary Hall; Surgeon's Mate H.M.S. Lancaster. Edited and transcribed by Ernest Gray. Cloth. Pp. 322. Price, $2.50. D. Appleton-Century Company, 35 W. 32nd Street, New York City, 1937.

John Knyveton was born in 1729 and so lived at the time of a considerable awakening in medicine. His diary gives startling, if true, pictures of medical and surgical practices of the day. His observation was close and his style extremely interesting. His adventures in the navy and elsewhere were such as to add much of interest to medical and surgical parts of the story. The editor has seen to it that proper names, names of hospitals, etc., are altered sufficiently as to protect the sensibilities of any whom too much truth might hurt.

CHRONIC ARTHRITIS AND FIBROSITIS: Diagnosis and Treatment, Bernard Langdon Wyatt, M.D., F.A.C.P., Director of The Wyatt Clinic. Cloth. Pp. 201. Price, $3.50. William Wood & Company, Mt. Royal and Guilford Avenues, Baltimore.

This book takes up diagnosis and general principles, going quite thoroughly into the practical details of successful methods of treatment of chronic arthritis and its allied affections. The author believes that we have sufficient existing knowledge, if properly applied, to banish most of the suffering and disability which now follow these conditions. In his introduction he confuses osteopathy with chiropractic, and considers them "forms of massage easily available and cheap."

THE BUSINESS SIDE OF MEDICAL PRACTICE. By Theodore Wiprud, Executive Secretary of the Medical Society of Milwaukee County, Lecturer in Medical Economics at the Marquette University School of Medicine. Cloth. Pp. 177. Price, $2.50. W. B. Saunders Company, West Washington Square, Philadelphia, 1937.

The layman executive secretary of a county medical society sets down here not advice concerning a doctor's investments, but rather well-chosen advice on how a doctor can organize his time and improve his personal efficiency by keeping financial and case records, keeping accounts and collections, conducting himself in court, preparing manuscripts, speaking in public, conducting meetings, dealing with the press, etc.

MEMORANDA OF TOXICOLOGY. By Max Trumper, B.S., A.M., Ph.D. Third Edition. Flexible, washable binding. Pp. 204. Price, $2.00. P. Blakiston's Son & Co., Inc., 1012 Walnut St., Philadelphia, 1937.

The book is small enough to slip into the pocket or bag and is right up to date with new poisons. Results of American research are stressed.

CAREERS FOR WOMEN. New Ideas, New Methods, New Opportunities—To Fit a New World. Edited by Catherine Filene. Cloth. Pp. 620. $3. Houghton Mifflin Company, New York City, 1934.

A well-organized book covering a wide field of work for women including medical illustration, medical secretary-technician, medical social service, medical social work, physiologist and physician.

PRACTICAL PROCTOLOGY. By Louis A. Buie, A.B., M.D., F.A.C.S., Head of Section on Proctology, The Mayo Clinic. Cloth. Pp. 512, with 152 illustrations. Price, $6.50. W. B. Saunders Company, West Washington Square, Philadelphia, Pennsylvania, 1937.

Osteopathic proctologists will be interested in the following statements in the preface:

"It cannot be said that progress in the field of proctology has been kept abreast of that which had been made in other departments of medicine. Without attempting to offer an explanation of the inveterate prejudices and antiquated practices which are still in vogue, it may be said that, in our own age, conditions exist which compose an aggregate so formidable that one may well wonder how, in the face of them, the exponents of sound methods in proctology have been able to make any advance. The fact that under such adverse circumstances, advances have been made, is proof of the commendable zeal of protagonists of proctology and justifies the belief that as adverse pressure is diminished, progress will continue with accelerated motion. . . .

"There are, in the medical profession, men who are willing and anxious to assume the task of emancipating the present day teachings and practices in proctology from those unfortunate prejudices and obsolete notions which have been not only demoralizing, but obstructive. New ideas and new discoveries possess an importance which it is impossible to exaggerate but unless and until such ideas are received and such discoveries are adopted, they can exercise small influence and can accomplish little benefit. If, therefore, it is desired to effect anything of real moment, it becomes necessary to discard old methods, the inefficiency of which has been demonstrated."

Some will feel that the author did not sufficiently get away from the old or bring in the new, in spite of the fact that this is a beautiful monograph, well and profusely illustrated, and it covers many aspects of the field of proctology with a great deal of attention to diagnosis, and with operative procedures given in full detail and made clear by means of step-by-step illustrations. In the section on anal pruritis, only the alcohol injection treatment is given with no mention of the new oil-soluble anesthetics and other substances which, in the hands of ambulant proctologists, have stopped the pruritis for weeks and may even have contributed, along with other measures, to permanent cure.

HEALTH EDUCATION OF THE PUBLIC: A Practical Manual of Technic. By W. W. Bauer, B.S., M.D., Director of Bureau of Health and Public Instruction, American Medical Association, and Thomas G. Hull, Ph.D., Director, Scientific Exhibit, American Medical Association, with an introduction by Morris Fishbein. Cloth. Pp. 227, with illustrations. Price, $2.50. W. B. Saunders Company, Philadelphia, 1937.

In his introduction Dr. Fishbein quotes the principles of medical ethics of the A.M.A. relating to the duty of the physician to give advice concerning public health and to counsel the public on subjects relating to sanitary police, public hygiene, and legal medicine. This book, written by two men who are very capable in this direction, tells just how the public should be educated by means of the radio, the exhibit, the meeting, pamphlets, newspapers, motion pictures, stereopticon slides, magazines, correspondence, books, etc. It is a valuable book to anyone who would guide public thought.

MASSAGE AND REMEDIAL EXERCISES IN MEDICAL AND SURGICAL CONDITIONS. By Noel M. Tidy, Member of the Chartered Society of Massage and Medical Gymnastics; Sister-in-Charge of the Massage Department, Princess Mary's Royal Air Force Hospital, Halton. Cloth. Pp. 429. Price, $5.25. William Wood and Co., Mt. Royal and Guilford Avenues, Baltimore.

This is a book for the masseur and medical gymnast based considerably of course on those who have developed these fields in the Scandinavian countries. It brings together consideration of varieties, causes, general functions, complications and principles of treatment of fractures, dislocations, sprains, diseases of joints and of the nervous system, deformities, and constitutional diseases. Each subject is given a brief outline of recognized treatment, a statement of the place of massage and remedial exercises in the entire treatment, usually a statement of the types of massage to be used and a list of beneficial exercises.

MATERNITY AND POSTOPERATIVE EXERCISES. By Margaret Morris, C.S.M.M.G., in collaboration with M. Randell, S.R.N., S.C.M., T.M.M.G. Cloth. Pp. 152, with illustrations. Price, $2.00. Oxford University Press, 114 Fifth Avenue, New York City, 1936.

Twenty exercises, most of which are suitable for expectant and nursing mothers and for postoperative conditions, are described with illustrated drawings. There are also exercises to train the expectant mother in the use of the muscles which come into action in childbirth. Special attention is given to training in deep breathing and relaxation and in the establishment of good posture.

CHEMISTRY IN THERAPEUTICS. By Walter B. Guy, M.D. Cloth. Pp. 182. Price, $3. W. Roy Huntsman, Philadelphia, 1935.

This book continues a previous book by the same author, "Hydrochloric Acid and Mineral Therapy." He believes that many forms of disease are due to stagnation of the lymph flow and disturbances in its chemical composition. One of his main objectives is the restoration of the com position and functions of the lymph to normal, which he undertakes to accomplish by the intravenous administration of hydrochloric acid and other minerals.

(Continued on Page 15)

State Boards

District of Columbia

The next examinations will be held beginning July 11 for two days, at the Franklin School Building, 13th and K Sts., N.W., Washington, D.C., at 9:00 a.m. All applications must be in the hands of the secretary-treasurer of the Commission on Licensure not later than June 15, 1938. For further information address George C. Ruhland, M.D., Secretary-Treasurer, Commission on Licenure, Room 203, District Building, Washington, D.C.

Georgia

The next examinations will be held on July 5 and 6 at the State Capitol, Atlanta.

Illinois

The next examinations will be held on October 18, 19 and 20 at Chicago. For further information address Oliver C. Foreman, 58 East Washington St., Chicago.

Iowa

The Iowa Board of Examiners in the Basic Sciences will conduct a written examination at the State Capitol, Des Moines, on July 12 at 9:00 a.m. Address W. L. Strunk, D.Sc., Secretary, Decorah.

Kansas

Charles C. Boyle, Bennington, was recently appointed to the Board for a 4 year term, ending May 23, 1942.

North Carolina

The next examinations will be held on July 1 and 2 at Raleigh. Frank R. Heine, 910 Security Bank Bldg., Greensboro, is secretary-treasurer.

Ohio

F. A. Dilatush, Lebanon, was reappointed to the Board for a three year term, ending in 1941.

South Carolina

The newly appointed board of osteopathic examiners recently elected the following officers: President, Nancy Hoselton, Columbia; secretary-treasurer, J. M. Harden, Greenwood. Other members of the board are: D. A. Farnum, Charleston and Emma Hale, Spartanburg.

Tennessee

G. A. Bradfute, Knoxville, was recently appointed to the Board, for a two year term, ending in 1940.

Conventions and Meetings

American Osteopathic Association Forty-Second Annual Convention, Netherland Plaza and Gibson Hotels, Cincinnati, July 11-15. Program chairman, R. McFarlane Tilley, New York City.

American Association of Osteopathic Examining Boards, Netherland Plaza, Cincinnati, July 12.
American College of Osteopathic Obstetricians, Netherland Plaza, Cincinnati, July 9. Program chairman, N. E. Atterberry, Denver.
American College of Osteopathic Surgeons, Cleveland. Program chairman, E. G. Drew, Philadelphia.
American Osteopathic Golf Association, Cincinnati, July.
American Osteopathic Society of Ophthalmology and Otolaryngology, Cincinnati, July 7-9.
American Osteopathic Society of Proctology, Marietta, Ohio, July 8-9 Cincinnati, July 11-14. Program chairman, R. O. Buck, Toledo.
Associated Colleges of Osteopathy, Netherland Plaza, Cincinnati, July 8-14.
Associated Hospitals of Osteopathy, Netherland Plaza, Cincinnati, July 12.
Illinois state convention, Danville, 1939.
Indiana state convention, Indianapolis, October.
International Society of Osteopathic Ophthalmology and Otolaryngology, Cincinnati, July 6.
Kansas state convention, Iola, October 12-14. Program chairman, Frank W. Shaffer, Salina.
Kentucky state convention, Lexington, October 13-14. Program chairman, Nora Prather, Louisville.
Legislative Council, Gibson Hotel, Cincinnati, July 11-14.
Louisiana state convention, October. Program chairman, W. Luther Stewart, Alexandria.
Middle Atlantic States Osteopathic Association, Asheville, N. Car., September.
Missouri state convention, Hannibal, October 20-22. Program chairman, F. W. Zuspan, Flat River.
Montana state convention, Billings, September 5-6. Program chairman, C. W. Starr, Billings.
National Board of Examiners for Osteopathic Physicians and Surgeons, Cincinnati, July 10.
Nebraska state convention, North Platte, September 26-28. Program chairman, H. A. Fenner, North Platte.
New York state convention, Hotel Arlington, Binghamton, October 8-9. Program chairman, J. James Grace, Binghamton.
North Carolina state convention, Raleigh, May 27. Program chairman, A. R. Tucker, Raleigh.
Ohio state convention, Columbus, 1939.
Osteopathic Women's National Association, Netherland Plaza, Cincinnati, July 11-15.
Pennsylvania state convention, Yorktowne Hotel, York, September 30 and October 1.
Society of Divisional Secretaries, Gibson Hotel, Cincinnati, July 11-14.
Southwestern Internist Conference, Tulsa, Okla.
Tennessee state convention, Memphis, 1939.
Vermont state convention, St. Johnsbury, October 5-6. Program chairman, Kenneth P. Wheeler, Brattleboro.
West Virginia state convention, Chancellor Hotel, Parkersburg, June 5-6, 1939. Program chairman, H. Lacey, Parkersburg.

Official and Affiliated Organizations

ARIZONA

State Society

The semi-annual meeting was held on May 28 at the Pioneer Hotel at Tucson. The following program was presented: "Anorectal Pain," Philip F. Hartman, Mesa; "The Principles of Osteopathy," Herman C. Bucholz, Yuma; "Heart Conditions as Influenced by Hot Weather," Charles C. Bradbury, Phoenix; "A Delivery of a Multi-

para with Uterine Inertia," Victor W. Kilcrease, Casa Grande; "Professional and Public Welfare Activities," Carleton E. Towne, Tucson; "Legislation Impending," A. B. Stoner, Phoenix.

The following officers were elected: President, Paul R. Collins, Douglas; vice president, Dr. Kilcrease; secretary-treasurer, Dr. Stoner, reelected.

The following committee chairmen have been appointed: Membership and convention program, Dr. Towne; professional education, Dr. Bradbury; hospitals, Dr. Bucholz; censorship, John P. Munro, Winslow; student recruiting, Cora M. Tolle, Prescott; public health and education, Dr. Hartman; industrial and institutional service, Dr. Stoner; clinics, Donald H. Simpson, Springerville; convention arrangements, Dr. Kilcrease; legislation, David L. Connor, Phoenix.

ARKANSAS

State Association

The following officers were elected on May 28: President, Paul W. Lecky, El Dorado; president-elect, C. W. Dalrymple, Little Rock; vice president, J. W. Werner, Jonesboro; secretary-treasurer, C. C. Chapin, Little Rock, reelected; statistician, H. V. Glenn, Stuttgart; sergeant-at-arms, William English, Texarkana; legislation, H. V. Glenn, Stuttgart; trustees, Lulu H. Wright, Hazen, D. A. English, Texarkana, Dr. Dalrymple.

Twin City Osteopathic Association

The following officers were elected on April 9: President, Walter Colquitt, Shreveport, La.; vice president, Etta Champlin, Hope; secretary-treasurer, Mabel Rape, Texarkana, Tex., reelected.

CALIFORNIA

State Association

The following officers were elected on June 10: President, Edward B. Houghtaling, San Diego; president-elect, Thomas L. Morgan, San Francisco; trustees for two years, Paul K. Theobald, Oakland, and Laura Nelson, Los Angeles.

Alameda County Osteopathic Society

In May, Erick Anderson, D.D.S., Oakland, was the principal speaker.

The following officers were elected: President, Harold W. Llewellyn, Berkeley; vice president, Dean O'Neil, Oakland; secretary-treasurer, Wilkie Hamlin, Alameda; trustee, Paul K. Theobald, Oakland; membership, Dr. O'Neil; publicity, Kenneth E. Palmer, Berkeley; legislation, Eugene Darnall, Berkeley.

Citrus Belt Branch

At Hemmet, May 13, Thomas J. Meyers, Pasadena, spoke on "Problems of the Nervous Patient."

The following officers were elected: President, Frank H. Dooley, Pomona; vice president, Herman Katz, San Bernardino; secretary-treasurer, Burdette J. Goff, San Jacinto; trustees, Alfred C. Fulmore, Riverside, and C. A. Rice, Corona.

Long Beach Branch

On May 18, Thomas W. McAllister, Los Angeles, spoke on "Diagnosis and Treatment of Diabetes."

The following officers were elected: President, Edgar W. Christensen; vice president, A. L. Pettigrew; secretary-treasurer, Ione S. Ingles; trustee, Laurence Houts, all of Long Beach.

Los Angeles Branch

On May 9, H. S. Perry, Los Angeles, spoke on "What the Taxpayers Demand; Do We Have the Answer?" and H. E. Litton, Los Angeles, spoke on "Manipulative Treatment of Constipation." Demonstrations were presented by Charles Atkins, Pasadena, Ralph Copeland, Los Angeles, Bertha Evans, Los Angeles, and T. Burton Edmiston, Los Angeles.

The following officers were elected: President, Maurice B. Starbuck, Whittier; president-elect, D. Duane Stonier, Los Angeles; secretary-treasurer, Mary L. LeClere, Los Angeles; trustee, John A. Costello, Los Angeles.

Los Angeles County

The following officers were elected in May: President, T. Y. Stelle, Glendale; president-elect, Samuel Biddle, Los Angeles; secretary-treasurer, John A. Costello, Los Angeles; trustee for two years, J. Lynn Goode, Los Angeles.

Pomona Osteopathic Luncheon Club

The following officers were elected in May: President, Franklin T. Kerr, Upland; vice president, Thomas Mallard, Covina; secretary-treasurer, Frank H. Dooley, Pomona, reelected.

Sacramento Valley Branch

The following officers were elected on April 30: President, Herbert S. Powis, Arbuckle; vice president, C. Stillman Wells, Los Angeles; secretary-treasurer, Leta B. Jackson, Sacramento. The following committee chairmen have been appointed: Membership, Una W. Cary, Sacramento; professional education, J. C. Rule, Stockton; hospitals, Stephen E. Curran, Sacramento; student recruiting, H. F. Kielle, Davis; public health and education, Arthur T. Seymour, Stockton; clinics, G. F. Coffee, Sacramento; publicity, Arthur V. Dunn, Sacramento; convention, Roy F. Buchman, Sacramento; legislation, Lester R. Daniels, Sacramento.

San Diego Branch

The following officers were elected on May 6: President, Lawrence J. Crow; vice president, F. S. Burton; secretary-treasurer, H. D. Thompson, all of San Diego.

San Diego Osteopathic Surgical Society

A representative of the Cameron Laboratories gave a demonstration with the Heart-O-Meter, and Mr. L. Newton Small concluded a series of talks on "Salesmanship."

H. D. Thompson, San Diego, was elected president and program chairman.

San Joaquin Valley Branch

At Bakersfield, May 22, Walter V. Goodfellow, Hollywood, spoke on "Common Eye, Ear, Nose and Throat Problems."

The following officers were elected: President, A. M. Tuttle, Bakersfield; vice president, Wendell G. Hendricks, Arvin; secretary-treasurer, Don C. Garn, Bakersfield.

San Jose Branch

At San Jose, May 15, Helen Shelley, San Jose, spoke on her experiences while traveling through Mexico.

The following officers were elected: President, S. Edith Robb, Palo Alto; vice president, John M. White, King City; secretary-treasurer, J. L. Moore, Palo Alto.

Sonoma County Branch

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership and publicity, Caroline L. Weber, Santa Rosa; professional education, M. J. Neilsen, Petaluma; hospitals, Gertrude Swearingen, Santa Rosa; censorship, R. D. Healey, Petaluma; student recruiting, George T. Reeve, San Rafael; public health and education, N. B. Rundall, Petaluma; industrial and institutional service, Bertram J. Green, Santa Rosa; clinics, William E. Jordt, Booneville; legislation, Dorothy Jordt, Booneville; convention program, Drs. Rundall and Green.

Tri-Counties Branch

The following are the present officers and committee chairmen: President and membership, Silas Williams, Santa Paula; secretary, Nelson D. Weed, Ventura; legislation, Charles R. Tilley, Oxnard.

COLORADO

State Association

At Canon City, May 15, at the annual meeting, the following program was presented: "Precancerous States," Fred E. Johnson, Colorado Springs; "X-Ray," H. L. Will, Colorado Springs; "Health," W. H. Brown, Denver; "Child Psychology," C. C. Reid, Denver.

DISTRICT OF COLUMBIA

District Association

The following officers were elected on May 24: President, Winthrop P. Wilcox; vice president, Felix D. Swope; secretary-treasurer, (temporary) Clara U. Little.

The following committee chairmen have been appointed: Membership, Mary K. Johnstone; hospitals, Thomas J. Howerton; student recruiting, George W. Maxfield; industrial and institutional service, Paul Hatch; clinics, Lulu I. Waters; publicity, Felix Swope; legislation, Chester D. Swope.

FLORIDA

State Association

The following officers were elected on May 18: President, H. B. Merner, Jacksonville; first vice president, Florence M. Town, St. Petersburg; second vice president, F. C. Wirt, Dade City; secretary-treasurer, David R. Shull, Fort Lauderdale, reelected. The following committee chairmen have been appointed: Membership, John E. Kane, Miami; convention program, A. G. Chappell, Jacksonville; convention arrangements, E. W. Wiley, Jacksonville; legislation, E. W. Flynn, Tallahassee; displays at fairs and expositions, Louis Larmoyeux, Jacksonville.

GEORGIA

State Association

At the thirty-sixth annual convention held at Hotel Dempsey, Macon, May 20 and 21, the following program was presented: "Pathology of Coronary Disease," Otterbein Dressler, Philadelphia; "Roentgenology in Diagnosis and Treatment of Pneumonia and Other Diseases," Paul T. Lloyd, Philadelphia; "Diagnosis and Treatment of Pneumoncoccic Pneumonia," Leo C. Wagner, Philadelphia; "Osteopathic Manipulative Treatment," C. Haddon Soden, Philadelphia; "Prenatal Care," H. Walter Evans, Philadelphia.

The following officers were reelected: President, Grover C. Jones, Macon; vice president, Dan H. Breedlove, Valdosta; secretary, Hoyt B. Trimble, Atlanta; treasurer, M. Lillian Bell, La Grange. The following committee chairmen have been appointed: Membership, Dr. Bell; professional education, Alexander Dahl, Atlanta; hospitals, Henry D. Webb, Columbus; censorship, T. C. Hardman, Dalton; student recruiting, H. H. Trimble, Moultrie; public health and education, Walter Jones, Rome; industrial and institutional service, R. W. Hartman, Athens; clinics, Rollo Brown, Columbus; publicity, Ben Williams, Columbus; statistics, Sarah Johnson, Rome; legislation, Hoyt Trimble, Atlanta; professional development, C. P. Orr, Savannah; displays at fairs and expositions, W. J. Bixler, Dublin; veterans affairs, Walter Elliott, Atlanta; radio, Frank Jones, Macon; speakers bureau, F. Muir Turner, Savannah; essays, Elizabeth Broach, Atlanta; social security medicine, Matt Henderson, Atlanta; convention program, D. C. Forehand, Albany; convention arrangements, W. Arthur Hasty, Griffin and Dr. Layne, Griffin.

IDAHO

Boise Valley Osteopathic Society

The following officers were elected on May 19: President, H. V. Heimburger, Parma; vice president, F. H. Thurston, Boise; secretary-treasurer, O. R. Meredith, Nampa, reelected.

ILLINOIS

Chicago—South Side Osteopathic Physicians' Society

The following meetings have been held recently:

May 26—"Consumers Plan," Mr. Otto Cullman, president of the Cullman Wheel Company; June 2—demonstration of electrical therapeutic equipment; June 16—"Osteopathy and Its Natural Adjuncts," Andrew A. Gour, Chicago.

Chicago—West Suburban Osteopathic Society

At La Grange, May 20, Martin C. Beilke, Chicago, spoke on "Osteopathic Technic."

Tri-City Osteopathic Association

The following are the present officers and committee chairmen: President, L. A. Nowlin, Davenport, Iowa; vice president and legislation, Holcomb Jordan, Davenport, Iowa; secretary-treasurer, J. R. Schneider, Rock Island; professional education, C. A. Nordell, Moline; student recruiting, Blanche B. Record, Rock Island; public health and education, Fred DeGrott, Rock Island; clinics, Theodore

M. Tueckes, Davenport, Iowa; publicity, Lydia T. Jordan, Davenport, Iowa; statistics, P. B. Snavely, Davenport, Iowa; convention program, Augusta T. Tueckes, Davenport, Iowa; professional development, V. A. Bergland, Rock Island.

Third District Illinois Osteopathic Association

The following officers were elected: President, J. T. Thornburg, Monmouth; vice president, T. R. Gilchrist, Galesburg; secretary-treasurer, J. D. Devlin, Monmouth.

At Galesburg, April 28, H. L. Collins, Chicago, spoke on "Minor Surgery."

Fifth District Illinois Osteopathic Association

At Paxton, June 5, Russell C. Slater, Ottawa, spoke on "The Effect of the Osteopathic Lesion on the Blood Cells of the Body."

Sixth District Illinois Osteopathic Association

At Paxton, June 5, James W. Barker, Eureka, discussed general problems pertaining to the District. Russell C. Slater, Ottawa, spoke on "The Clinical Aspects of Colloidal Chemistry."

Eighth District Illinois Osteopathic Association

The following officers were elected on April 24: President, L. E. Wood, Salem; vice president, E. D. Foss, Flora; secretary-treasurer, C. O. Jayne, Centralia, reelected.

INDIANA

Northeastern Indiana Osteopathic Association

At Fort Wayne, May 11, Anna Mary Mills, Chicago, spoke on "Child Psychology."

Second District Indiana Osteopathic Association

On April 27, the following officers were elected: President, Frank J. Summers, Muncie; secretary-treasurer, Robert D. Rogers, Newcastle, reelected.

KANSAS

Arkansas Valley Society of Osteopathic Physicians and Surgeons

On May 26, Ray E. McFarland, Wichita, showed motion pictures and also conducted a round table discussion.

The following officers were elected: President, L. B. Foster, Jetmore; vice president, Ivan F. Hooper, Russell; secretary-treasurer, V. R. Cade, Larned; program chairman, F. E. Loose, Lewis; vice program chairman, Thomas B. Powell, Larned; trustee, Paul R. Jones, Greensburg.

The June meeting was scheduled to be held at Hoisington on the 30th.

Central Kansas Association of Osteopathic Physicians and Surgeons

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Censorship, L. W. Simmons, Hope; student recruiting, William S. Childs, Salina; public health and education, Charles C. Boyle, Bennington; clinics, E. F. Stark, Abilene; convention program, Frank W. Shaffer, Salina.

At Marion, May 19, a child health clinic was conducted.

Eastern Kansas Osteopathic Society

At Garnett, May 12, A. B. Crites, Kansas City, Mo., spoke on "Sinus Infections."

At Ottawa, June 9, a round table discussion was conducted. A meeting was scheduled to be held at Lawrence on June 30.

Northeast Kansas Osteopathic Association

At Holton, June 1, Senator Richards of Nemaha County was the guest speaker.

South Central Kansas Society of Osteopathic Physicians and Surgeons

At El Dorado, May 26, J. O. Strother, Winfield, spoke on "Principles of Osteopathy"; Richard Gibson, Winfield, spoke on "Schilling Hemogram," and Esther Smoot, Eureka, talked on "Osteopathic Technic."

Southeast Kansas Society of Osteopathic Physicians and Surgeons

At Neodesha, May 19, a business meeting was held.

LOUISIANA

State Society

A semi-annual meeting was held at the Hotel New Orleans, New Orleans, April 30 and May 1. A business meeting was held and technical papers were presented.

MAINE

State Association

At Lakewood, June 4, the following program was presented: "Athletic Injuries," Charles R. Wakeling, Boston, Mass.; "Indications of Cancer," Orel F. Martin, Boston, Mass.; "Blood Chemistry," Gervase C. Flick, Boston, Mass.

The following officers were elected: President, Milton F. Hall, Kennebunk; vice president, George F. Noel, Dover-Foxcroft; secretary, Louise M. Jones, Portland, reelected; treasurer, Genoa A. Sanborn, Lewiston, reelected; trustees, Eldred B. Wales, Winthrop, Walter B. Roben, Houlton, and Harry J. Pettapiece, Camden.

MARYLAND

State Association

At Baltimore, April 24, the following program was presented: "The Burke-Drew Bill," Mr. Lawrence L. Gourley, Washington, D.C.; "Hypermobile Joint" and "Special Technic," Earl Gedney, Philadelphia.

MASSACHUSETTS

Southeastern Osteopathic Society

On April 12, D. C. Hulett, Newport, R. I., spoke on "X-Ray in General Practice."

MICHIGAN

Detroit Association of Physicians and Surgeons of Osteopathic Medicine

The following officers were elected in May: President, Bernardine Schefneker, Detroit; vice president, H. M. Ekelman, Detroit, secretary, Verne H. Dierdorff, River Rouge, reelected; treasurer, Willis Yeamans, Detroit; statistician, George B. F. Clarke, Detroit, reelected; trustees, I. L. O'Connor, Detroit, William D. Bradford, Jr., Detroit and James W. Day, Detroit.

Washtenaw County Society of Physicians and Surgeons

The following are the present officers and committee chairmen: President, L. J. Wilson, Ypsilanti; vice president, Dorothy Sellards, Ann Arbor; secretary-treasurer, C. C. Lucas, Ann Arbor; membership, student recruiting and public health and education, George Mickle, Ann Arbor; clinics and legislation, Dr. Wilson.

MISSOURI

Central Missouri Osteopathic Association

At Laddonia, May 19, J. E. Cavanaugh, Kansas City, was the principal speaker.

North Central Society of Osteopathic Physicians and Surgeons

At Marceline, May 19, H. D. McClure, Kirksville, was the guest speaker.

Osage Valley Osteopathic Association

On May 20, Margaret Jones and a group of students from the Kansas City college conducted a demonstration on obstetrical technic.

St. Louis Osteopathic Association

On June 21, S. H. Leibov, St. Louis, spoke on "Office Surgery," and a representative from the Musebeck Shoe Company demonstrated "Foot Balance."

Southwest Missouri Osteopathic Association

At Jasper, May 18, John H. Denby, Kirksville, was the guest speaker.

The July meeting is scheduled to be held on the 20th at Joplin.

West Central Missouri Osteopathic Association

At Lone Jack, May 26, Addison Dwyer, D.D.S., Blue Springs, was the guest speaker.

The June meeting was scheduled to be held on the 30th at Weaubleau.

NEBRASKA

Central Nebraska Osteopathic Association

At Central City, May 8, W. H. Walters, Hastings and Bruce L. Ross, Central City, were the principal speakers.

Southwestern Nebraska Osteopathic Society

At McCook, May 15, the following were the speakers: Harold A. Fenner, North Platte, Dr. Drost, North Platte; A. E. Moss, Kimball; George C. Widney, Lexington; M. T. Boulware, McCook; Jose A. Domingues, North Platte.

NEW HAMPSHIRE

State Society

The following program was presented on May 21 at Concord: "Posture," and "Foot Technic," Olive Williams, Worcester; "Osteopathic Athletics," Charles Wakeling, Boston; "The Symptomatic Diagnosis of Anorectal Diseases," and "Clinical Treatment of Rectal Diseases," J. J. Cronin, Boston; "Sanitary Health Measures in the City of Concord," Donald G. Barton, M.D., City Health Officer.

The following officers were reelected: President, Ralph G. Beverly, Keene; vice president, Marion Caldwell, Dover; secretary-treasurer, C. Stevens Garran, Rochester. Kenneth R. Steady, Portsmouth, was appointed Director to the New England Osteopathic Association, Osmond R. Strong, Concord, representative for New Hampshire to the New England Legislative Committee and chairman of the legislative committee for three years.

NEW JERSEY

State Society

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Legislation, James E. Chastney, Hackensack; public relations and publicity, David Steinbaum, Bayonne; program, C. N. Tillotson, East Orange; professional affairs, J. Devine, Ocean City and Tyce Grinwis, Maplewood; clinics and statistics, A. Gillis, Merchantville.

Bergen County Osteopathic Society

The following are the present officers and committee chairmen: President, M. J. Schoonmaker, Hackensack; vice president, hospitals, and clinics, Donald S. Terhune, Teaneck; secretary-treasurer, Stephen Szalay, Teaneck; membership, J. Mahlon Beaven, Ridgewood; censorship, publicity and legislation, James E. Chastney, Hackensack; convention program, William B. Wilson, Ridgewood.

Essex County Osteopathic Society

At East Orange, June 7, Dr. Harold R. Gelhaar spoke on "Orthodontia in Respect to the General Practitioner."

Passaic County Osteopathic Society

At Passaic, June 16, the following officers were elected: President, Fred C. Caverly, Passaic; vice president, Howard I. Van Dien, Paterson, reelected; secretary, Richard R. Schleusner, Paterson; treasurer, Hazel R. Lachner, Paterson, reelected.

NEW YORK

Central New York Osteopathic Society

On May 25 Elizabeth Parsons, Syracuse, lectured on "Plasmatic Therapy," and Arthur Peckham, Watertown, on "Cervical Pathology."

Osteopathic Society of the City of New York

On May 21 the following officers were elected: President, Edward H. Gibbs; vice president, F. Gilman Stewart; secretary, Henry W. Frey; treasurer, Ethel K. Traver, reelected; sergeant-at-arms, Edgar S. Keefer, Jr.; board of directors, chairman, R. McFarlane Tilley; Donald B. Thorburn, W. Kenneth Riland, all of New York City. Dr. Stewart was appointed membership chairman, and E. Campbell Berger, New York City, public relations chairman.

Rochester District Osteopathic Society

A meeting was held on May 20.

Westchester Osteopathic Society

The following officers were elected on May 4: President, Ernest M. Hunt, White Plains; vice president, Alvah H. Leeds, Yonkers; secretary, Barbara Redding, Larchmont; treasurer, Oskar Knodt, Ossining, reelected; sergeant-at-arms, William B. West, Port Chester.

Western New York Osteopathic Association

At Niagara Falls, May 7, L. Stowell Gary, Buffalo, spoke on "Calcium and Phosphorus and Their Relation to Osteopathic Lesions."

The following officers were elected: President, Howard B. Herdeg,

Buffalo; vice president, Elsie M. Shepardson, Niagara Falls; secretary, Edgar R. Cofeld, Buffalo; treasurer, Herman P. Zaehringer, Kenmore; directors, Charles A. Kaiser, Lockport, Percy L. Weegar, Buffalo, and Edith E. Dovesmith, Niagara Falls.

NORTH CAROLINA

State Society

The following officers were elected on May 28: President, Thomas M. Funk; Mooresville; vice president, Milton G. Joslin, Fayetteville; secretary-treasurer, Frank R. Heine, Greensboro, reelected; trustee for three years, E. G. Hornbeck, Rocky Mount. The following committee chairmen have been appointed: Censorship, S. W. Hoffman, Statesville; student recruiting, S. O. Holland, Salisbury; industrial and institutional service, Thomas M. Rowlett, Concord; publicity, E. M. Stafford, Durham; convention program, A. R. Tucker, Raleigh; legislation, T. T. Spence, Raleigh.

OHIO

State Society

The following officers were elected on May 17: President, H. L. Benedict, Marietta; vice president, R. S. Licklider, Columbus; secretary-treasurer, M. A. Prudden, Fostoria, reelected; editor, M. A. Prudden, Fostoria; legislation, J. O. Watson, Columbus.

Butler County Osteopathic Society

An organization meeting was held on June 14. Meetings will be held once a month. The following officers were elected: President, William B. Lamb, Hamilton; vice president, C. A. Lynch, Middletown; secretary-treasurer, Dora Dietz, Middletown.

Muskingum County Association of Osteopathic Physicians

An organization meeting was held in June and the following officers were elected: President, W. W. Slater, Zanesville; secretary-treasurer, P. W. Graff, Zanesville. Meetings will be held on the first Monday of each month.

Southeastern Ohio Osteopathic Society

(See Seventh (Marietta) District Osteopathic Society)

Second (Cleveland) District Osteopathic Society

(See also Third (Akron) District)

The officers were reported in THE JOURNAL for May. The following committee chairmen have been appointed: Membership, Kerwin P. Purdum; professional affairs, W. B. Carnegie; entertainment, Ralph W. Kelley; public affairs, L. G. Greenbaum; program, H. R. Sprague; legislation, U. A. Charbonneau, all of Cleveland.

Third (Akron) District Osteopathic Society

A joint meeting with the Second (Cleveland) District was held on June 8 at Kent.

The officers were reported in THE JOURNAL for May. The following committee chairmen have been appointed: Membership, J. F. Rader, Massillon; professional education, N. A. Ulrich, Kent; hospitals, Mark A. Bauer, Canton; censorship, J. J. Mahanna, Warren; student recruiting, M. C. Kropf, Orville; public health and education, Alma C. Webb, Akron; industrial and institutional service, C. F. Hess, Canton; clinics, A. E. Smith, Youngstown; publicity, Lillian H. Anderson, Akron; statistics, C. L. Naylor, Ravenna; convention program, Robert L. Souder, Ashland; convention arrangements, J. C. Eschliman, Youngstown; legislation, H. L. Samblanet, Canton; professional development, G. E. Brooker, Canton; displays at fairs and expositions, H. H. Storey, Warren.

Fourth (Columbus or Central) Ohio Osteopathic Society

On June 2, representatives of the Musebeck Shoe Company spoke on "Foot Comfort."

Fifth (Dayton) District Osteopathic Society

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, Warren Bradford; program, Harry Cosner; hospitals, Heber Dill; censorship, W. A. Gravett; student recruiting and publicity, W. W. Custis, Dayton; legislation, Robert Haas, all of Dayton.

Seventh (Marietta) District Osteopathic Society

The following are the present officers and committee chairmen: President, George O. Smith; vice president and publicity, W. W. Slater, Zanesville; secretary-treasurer and professional development, E. B. King, Marietta; membership, C. L. Ballinger, Marietta; professional education, H. R. Nye, Athens; hospitals, L. E. Butts, Nelsonville; censorship, H. M. Rothman, New Lexington; student recruiting, P. W. Graff, Zanesville; public health and education, Hazel Lyne, Zanesville; industrial and institutional service, L. H. Schreck, Cambridge; clinics, W. A. Larrick, Cambridge; statistics, M. D. Worley, Athens; convention program, I. N. Beall, Zanesville; convention arrangements, W. P. Roberts, Zanesville; legislation, J. E. Wiemers, Marietta; displays at fairs and expositions, L. M. Bell, Marietta.

OKLAHOMA

Kay County Osteopathic Association

At Tonkawa, May 19, the following officers were elected: President, W. A. MacDonald, Newkirk; vice president, Eleanor G. Laughton, Tonkawa; secretary-treasurer, William A. Laughton, Tonkawa.

Muskogee County Osteopathic Society

At Muskogee, May 16, a meeting was held. The following are the present officers: President, Maurice J. Schwartz; secretary-treasurer, H. C. Montague, both of Muskogee.

Tulsa District Osteopathic Association

On May 12 at Tulsa, R. B. Bever, Checotah, spoke on "Medical Adjuncts to Osteopathic Treatment."

On June 9, Mr. M. Kelseaux spoke on "Accessory Foods and Body Chemistry."

The following officers were elected: President, Harry E. Greene; vice president, John W. Orman; secretary-treasurer, D. C. Logan; trustees, Harry Conway and Edith Oaks, all of Tulsa.

PENNSYLVANIA

Lehigh Valley Osteopathic Association

At Doylestown, May 12, Professor Russell C. Erb, spoke on the Philadelphia college. Mr. Floyd L. Kefford, Registrar of the Philadelphia college, spoke on "Trends in Education and in Choosing a Profession."

RHODE ISLAND

State Society

The officers were reported in THE JOURNAL for June.

The following committee chairmen have been appointed: Membership, Frederick F. Manchester; professional education, William J. Nairn; hopitals, Foster C. True; censorship, Herbert L. Adams; student recruiting, Eva W. Magoon; public health, William B. Shepard; publicity and public education, William E. Kirby; industrial and institutional service, Terrell E. Cobb; clinics, Dr. Manchester; rules, F. Chandler Dodge, all of Providence; legislation, John H. Finn, Newport.

On May 12, Morris L. Grover, M.D., Director of the Bureau of Preventable Diseases of the State Department of Public Health, spoke on "The Prevention of Venereal Disease."

SOUTH CAROLINA

State Association

At the twenty-ninth annual convention held at Hotel Columbia, Columbia, May 14, Otterbein Dressler, Philadelphia, spoke on "Laboratory Procedures and Diagnoses," and "Undulant Fever and Peptic Ulcer," and Leo C. Wagner, Philadelphia, on "Anterior Poliomyelitis," and "Diseases of the Heart in Children."

The following officers were reelected: President, E. W. Pratt, Charleston; vice president, T. C. Lucas, Columbia; secretary-treasurer, Joanna Barnes, Ridge Spring.

SOUTH DAKOTA

State Association

At the annual convention held on May 9 and 10 at Masonic Temple, Mitchell, the following program was presented: "Problems in Technic," and "Standing X-Ray Studies," Wallace M. Pearson, Kirksville, Mo.; "Cardiac Irregularities," L. S. Betts, Huron.

The following officers were elected: President, C. M. Parkinson, Highmore; vice president, G. R. Caldwell, Webster; secretary-treasurer, Benedicta M. Lewis, Pierre, reelected; trustees, C. F. Overturf, Scotland, Jennie Ferguson, Redfield, H. W. O'Banion, Canton, and Saul Siegel, Tolstoy.

The following committee chairmen have been appointed: Membership, Robert O. Eiselt, Flandreau; professional education, J. G. Betts, Spearfish; hospitals, O. A. Jungman, Ramona; censorship, W. L. Huetson, Alcester; student recruiting, R. S. Sarran, Mitchell; public health and education, M. W. Myers, Parker; industrial and institutional service, P. W. Wasner, Deadwood; public relations, C. S. Betts, Huron and Saul Siegel, Tolstoy; publicity and editorial contact, L. S. Betts, Huron; legislation, J. H. Cheney, Sioux Falls, C. S. Betts, Huron, and L. F. Bartels, Faith; radio contact, C. C. Pascale, Centerville; speaker's bureau, John Sweeney, Watertown; veteran's affairs, W. G. Rosencrans, Vermillion; social medicine, F. E. Burkholder, Sioux Falls, and S. J. Michelman, Herreid; vocational guidance, C. Rebekka Strom, Sioux Falls; convention program, J. L. O'Neill, Mitchell, and Clara G. Owens, Miller; convention arrangements, L. S. Betts, Huron and J. H. Mahaffey, Huron.

TENNESSEE

State Society

The fortieth annual meeting was held at the Andrew Jackson Hotel, Nashville, May 23 and 24. The following scientific program was presented: "What Is Your Type," James A. Blair, Kingsport; "Proctologic Conditions," L. D. Elliston, Covington; "Osteopathy and Social Security," and "Some Osteopathic Problems," R. C. McCaughan, Chicago, Executive Secretary of the A.O.A.; "Nose and Throat Conditions, Their Diagnosis and Treatment," S. D. Alexander, Columbia.

The following officers were elected: President, Dr. Alexander; vice presidents—East Tennessee, James S. Blair, Kingsport, reelected; Middle Tennessee, H. P. Schwartz, Columbia; West Tennessee, Walter Baker, Memphis; secretary-treasurer, Helen Terhuwen, Nashville, reelected; trustee, L. D. Chesemore, Paris.

The following committee chairmen have been appointed: Legislation, J. R. Shackleford, Sr., Nashville; social security, public health and clinics, Dr. Terhuwen; industrial and institutional service, Dr. Elliston; radio, George Stevenson, Springfield; publicity, H. R. Bynum, Memphis; education, Charles Owens, Chattanooga; membership, R. L. Park, Trenton; ethics, O. Y. Yowell, Chattanooga; ways and means, R. C. Hart, Chattanooga.

TEXAS

State Association

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Legislation chairman, Everett W. Wilson, San Antonio, vice chairman, Henry E. Roberts, Denton; hospitals and clinics, John M. Peterson, Marfa; censorship, Mary G. Bedwell, Dallas; student recruiting, Mary Lou Logan, Dallas; public health and education, Lloyd W. Davis McAllen; industrial and institutional service, Tom R. Wright, Dallas; publicity, Sam L. Scothorn, Dallas; convention program, L. N. McAnally, Fort Worth; membership, Dr. Wilson.

Dallas County Osteopathic Association

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, H. L. Betzner; professional education, H. H. Gerardy; hospitals, M. A. Schalck; censorship, J. W. McPherson; student recruiting, C. E. Logan; public health and education, M. E. Sutphin; industrial and institutional service, J. W. Crawford; clinics, Marille Sparks; publicity, Sam L. Scothorn; statistics, G. E. Hurt; convention program, Sam Sparks; convention arrangements, L. H. Logan; legislation, Carl J. Wieland; professional development, Mary Bedwell; displays at fairs and expositions, Bert W. Gulp, all of Dallas.

Lower Rio Grande Valley Osteopathic Association

At Brownsville, May 28, D. W. Davis, Beaumont, spoke on "Surgery in Relation to Low-Back Pain."

Southeast Texas Osteopathic Association

On June 4 and 5, at Houston, a symposium on "The Acute Abdomen," was presented.

Wichita County Osteopathic Society

On May 25, W. S. Corbin, Chickasha, Okla., and Sam Sparks, Dallas, were the principal speakers.

VERMONT

State Association

A semi-annual business meeting was held at Rutland, May 15.

VIRGINIA

State Society

The officers were reported in THE JOURNAL for May. The following committee chairmen have been appointed: Membership, S. H. Bright, Norfolk; professional education and publicity, F. D. Swope, Alexandria; hopitals, O. L. Miller, Harrisonburg; censorship, L. C. McCoy, Norfolk; student recruijing, Charles P. Dickerman, Staunton; public health and education, H. S. Liebert, Richmond; industrial and institutional service, H. H. Bell, Petersburg; clinics, B. D. Turman, Richmond; statistics, Gena L. Crews, Norfolk; convention program and arrangements, C. C. Akers, Lynchburg; legislation, E. H. Shackleford, Richmond; professional development, Margaret E. Bowen, Richmond.

WASHINGTON

King County Oteopathic Association

A dinner meeting was held on May 12.

On June 9 the following officers were elected: President, C. H. Baker; vice president, Hattie Slaughter, reelected; secretary, George Fuller, reelected; treasurer, A. B. Cunningham, reelected, all of Seattle.

Pierce County Osteopathic Society

At Tacoma, May 10, Eugene D. Mosier, Puyallup, spoke on "Physiology of the Osteopathic Lesion."

WEST VIRGINIA

State Society

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, H. E. McNeish, Elkins; professional education, G. C. Eoff, Wellsburg; student recruiting, Roy Eshenaur, Point Pleasant; legislation, John H. Robinett, Huntington; library, T. H. Lacey, Parkersburg.

Ohio Valley Osteopathic Association

At Moundsville, May 26, E. E. Sieg, Holliday's Cove, spoke on "The Menopause."

WISCONSIN

Milwaukee District Osteopathic Society

The following were elected on May 14: President, Paul Atterberry; vice president, Ralph E. Davis; secretary-treasurer, Stuart P. Stevenson, all of Milwaukee.

CANADA

Ontario Academy of Osteopathy

The thirty-seventh annual meeting was held on May 30 and 31 at the Royal York Hotel, Toronto. The following scientific program was presented: "Pathology of the Osteopathic Lesion," "Spinal Mechanics," "Standing X-Ray Study," "Means of the Removal of Lesion Pathology," and "The Gross Mechanical Problem Relative to the Lesion," Wallace M. Pearson, Kirksvile, Mo.; "The Heart," and "Normal and Pathological Heart Action," S. V. Robuck, Chicago; technic demonstrations, Drs. Pearson and Robuck; "Liability Insurance for Members of the O.A.O.," Mr. M. F. Harris; "Insurance Recognition of Osteopathic Physicians," Mr. D. B. Garfat.

The following officers were elected: President, J. J. O'Connor, Toronto; vice president, J. I. St. Clair Parsons, Ottawa; secretary, E. S. Detwiler, London, reelected; treasurer, Olive Matthews, Kitchener, reelected; editor George A. DeJardine, Toronto.

The following committee chairmen have been appointed: Membership, Dr. Parsons; professional education, D. Firth, Toronto; student recruiting and statistics, Mary L. Heist, Kitchener; public health and education, H. J. Pocock, Toronto; industrial and institutional service, D. G. A. Campbell, Sudbury; legislation, J. N. McRae, Galt.

Province of Quebec Osteopathic Association

The following program was presented on May 28: "Diagnosis and Treatment of Osteopathic Lesions," C. Haddon Soden, Philadelphia; "Laboratory Diagnosis in General Practice," Sydney B. Ball, Montreal; "Hepatic Complications," J. I. St. Clair Parsons and Ray Linnen, both of Ottawa; "Elimination of Arch Supports," A. A. Eggleston, Montreal.

The following officers were elected: President, W. P. Currie, reelected; vice president, F. G. Marshall, reelected; secretary, A. A. Eggleston, reelected; treasurer, B. E. Marshall, all of Montreal.

Special and Specialty Groups

New England Osteopathic Association

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, Lionel J. Gorman, Boston; publicity, Ralph Beverly, Keene, N. H.; convention program, Karnig Tomajan, Boston; legislation, Albert Chittenden, Auburn, Me.; convention arrangements, William T. Knowles, Boston and William S. Perkins, York Harbor, Me.; displays at fairs and expositions, Walter Davies, Somerville, Mass.

Osteopathic Clinical Society

At Bethlehem, June 19, the following program was presented: "Relation of Gastrointestinal Pathology to the Cardiovascular System," Joseph L. Root, Philadelphia; "The Acute Upper Abdomen," Ralph P. Baker, Philadelphia. Clinics were held in the afternoon.

DIVISIONAL SOCIETY	PRESIDENT	SECRETARY
Alabama	Meredith White, 432 First National Bank Bldg., Mobile	Percy H. Woodall, First National Bank Bldg., Birmingham
Arizona	Paul R. Collins, Meguire Bldg., Douglas	A. B. Stoner, 422 Security Bldg., Phoenix
Arkansas	Paul W. Lecky, 314 E. Elm St., El Dorado	C. C. Chapin, 1007 Donaghey Bldg., Little Rock
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Book Notices

(Continued from page 564)

TWELVE HOURS OF HYGIENE. By F. Meredith, B.Sc., M.D., Professor of Hygiene, Tufts College, Lecturer on Hygiene, Simmons College. Cloth. Pp. 387, with 110 illustrations. P. Blakiston's Son and Co., Inc., 1012 Walnut Street, Philadelphia.

This is an abridged edition of a college textbook on hygiene and is intended as a short course for college freshmen. The chapter subjects are: The Body and Its Functions, Medical Science in the Service of Health, Upkeep and Energy Supply, Digestion and Elimination, The Use of Energy in Activities, Byproducts of Activity and Energy Renewal, Body Mechanics, Thermal Regulation, Cleanliness and the Appearance, Infection and Resistance, Physical and Chemical Hazards, Reproduction and Sex.

REPORTS ON CHRONIC RHEUMATIC DISEASES. By C. W. Buckley, M.D., F.R.C.P. Cloth. Pp. 131. Price $3.50. The Macmillan Company, 65th Avenue, New York, 1937.

This is the third annual volume of reports of the British Committee on Chronic Rheumatic Diseases. The object of the reports is to present an account of clinical and laboratory observation and research with a survey of the work being carried out in other countries. The aim is to encourage and coordinate such work as is being done and to suggest fresh lines of investigation. The subject of the papers comprised herein include Vaccines and Rheumatoid Arthritis; Sympathectomy in Arthritis; X-ray Therapy in Chronic Arthritis; Vitamins and Rheumatic Diseases; Neutrophil Leucopenia, with Enlargement of the Liver and Spleen in Rheumatoid Arthritis; Critical Commentaries: Mineral Metabolism, Arthritis and the Reticulo-Endothelial System, Still's Disease, Chrysotherapy in Arthritis, Recent Work on Osteo-Arthritis, Diet in Arthritis; A Synopsis of Recent American Investigations on Diseases of Joints and Related Structures; The Value of Sodium Salicylate in the Treatment of Gout; Possible Dangers Resulting from the Administration of Certain Drugs in Rheumatic Disorders and Reviews on French and German Literature, and Abstracts, Made and Translated from the Italian Journals.

JURISPRUDENCE FOR NURSES. By Carl Scheffel, Ph.B., M.D., LL.B. Second Edition. Cloth. Pp. 248. The Trained Nurse and Hospital Review, 468 Fourth Avenue, New York City, 1938.

This is said to be the only book on this subject, which is so prominently discussed in nursing circles at the present time. Besides the expected chapters on the legal status of nurses, the legal obligations of nurses, nurses in contracts, nurses in wills, the nurse as a witness, the criminal responsibility of nurses, property rights in various types of records, etc., there are a summary of the existing laws in several states, including the New York law which goes into effect in 1938, and a Specimen Act emphasizing desirable features for incorporation in the best type of legislation.

RECENT ADVANCES IN THE STUDY OF RHEUMATISM. By Frederic John Poynton, M.D., F.R.C.P. (Lond.), and Bernard Schlesinger, M.A., M.D., (Camb.), F.R.C.P. (Lond.) 2nd Edition. Cloth. Pp. 380, with 51 illustrations. Price, $5.00. P. Blakiston's Son & Co., Inc., 1012 Walnut St., Philadelphia, 1937.

Six years after the appearance of the first edition, this number, in that excellent series of "Recent Advances," prepared in England and published in America by P. Blakiston's Son & Co., gives a bird's-eye view of the field including acute rheumatic fever, both acute and chronic states of the same disease, chronic arthritis, fibrositis, and allied states. Much is done in this book to correlate clinical and laboratory truths, but the compilers still take the ground that the etiology of rheumatism is as yet an unsolved problem.

MIDDLE AGE IS WHAT YOU MAKE IT. By Boris Sokoloff, M.D., Sc.D. Cloth. Pp. 204, Price, $1.75. The Greystone Press, New York City, 1938.

Believing that middle age is the period of man's greatest capacity for achievement—the period of his physical and spiritual maturity—Dr. Sokoloff takes up various phases of living those years. Among his chapter heads are: Happiness and Health, A Middle-Aged Man Should Have His Own System of Living, Age Discrimination and Chronic Disease, Immortality and Old Age, and Vitality and Fatigue.

Dr. Sokoloff is a Russian whose work in the Rockefeller Institute, the Pasteur Institute, Washington University, and elsewhere, has given him a good background for his interesting writings.

(Continued on page 16)

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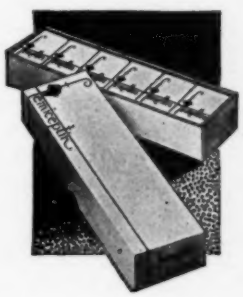

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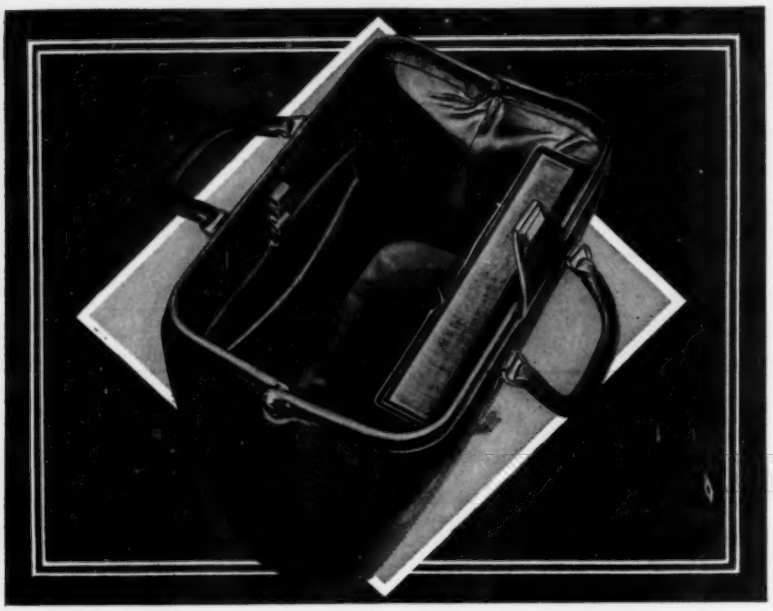

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Book Notices

(Continued from page 15)

MANUAL OF CLINICAL LABORATORY METHODS. By Pauline S. Dimmitt, Ph.G., Medical Technologist for the Stout Clinic, Sherman, Texas. Cloth. Pp. 156. Price, $2.00. Illustrated with 37 engravings, including 7 colored plates. F. A. Davis Company, publishers, 1914-16 Cherry Street, Philadelphia.

This volume covers the more important tests for the clinical laboratory procedures of urine, blood, sputum, gastric and duodenal contents, liver function, feces, transudates and exudates, cerebrospinal fluid, bacteriology, examination of milk, syphilis, blood chemistry, the preparation of autogenous vaccines, the hormone test for pregnancy, blood transfusion tests, and agglutination tests for bacteria.

The clinical interpretation of clinical findings is not particularly stressed although it is mentioned briefly. It primarily covers the details of clinical laboratory procedures and the importance of using accurate and reliable apparatus and reagents in making the various tests.—R. E. BECKER, D.O.

TRAUMA AND DISEASE. Edited by Leopold Brahdy, B.S., M.D., and Samuel Kahn, B.S., M.D. Cloth. Pp. 613, with illustrations. Price, $7.50. Lea and Febiger, 600 South Washington Square, Philadelphia, 1937.

This book by two dozen prominent physicians will prove of considerable value to those having to do with compensation boards. Comparatively little attention is paid to certain phases of the problem of trauma and disease which are of particular interest to osteopathic physicians. There are chapters having to do with trauma in the etiology of disease, t r a u m a and heart disease, trauma and peripheral vascular disease, pulmonary, gastrointestinal, genitourinary disease, obstetric and gynecologic and mental conditions, bone diseases, joint diseases, diseases of the spine, and others. Among significant and interesting statements we find: "With few exceptions, there is no one exclusive cause of a disease. Several factors, in varying combinations, usually constitute the conditions under which a disease develops. One of the factors may be constant, e.g. the specific organism in an infectious process. But this constant specific factor, acting alone, does not always produce its disease. The tissues must be prepared to permit the development and growth of the invading organism. A transient bacteriemia often occurs without ill effects; only when the bacteria circulating in the blood light on devitalized or weakened tissue do they multiply and produce the infectious disease. The secondary, inconstant factor—the lessened resistance of the tissues—may be as important as is the bacterium itself. . . .

"Trauma, as a factor in the causation of disease, should be studied in the same way as malnutrition. Much has been learned during the last several decades; much still remains obscure. . . ."

TREATMENT IN GENERAL PRACTICE. By Harry Beckman, M.D. Third edition, revised and reset. Cloth. Pp. 787. Price $10.00. W. B. Saunders Company, West Washington Square, Philadelphia, 1938.

In this third edition of an excellent work the author gives full credit to the many authorities whom he quotes and yet the book is Dr. Beckman's in judgment, in choice of emphasis, in application of knowledge. The new edition is by no means merely a new printing. It is re-arranged in important particulars. There is no longer a section on diseases of metabolism. Diabetes mellitus, diabetes insipidus and hyperinsulinism now appear in a new section on endocrine disturbances. Obesity and malnutrition have a section of their own. There are also new sections on menstrual disturbances, diseases of the liver and bile passages, disturbances of water, salt and protein balance, disturbances caused by excessive heat, the anemias, and blood disturbances other than anemias. Rheumatic fever, rheumatoid arthritis, osteoarthritis and gout now have their own chapter in the infectious disease section.

MEDICAL TREATMENT OF CATARACT. By A. Edward Davis, A.M., M.D. Pp. 161. Cloth, $3. F. A. Davis Company, 1914-16 Cherry Street, Philadelphia, 1937.

It is the author's belief that incipient cataract is preventable and that since cataract is responsible for more than one-third of the cases of blindness past the age of 64, its early discovery and treatment is of prime importance. Among the causes of cataract he finds toxemia from faulty metabolism; eyestrain; focal infections; radiational injury; endocrine disturbances, etc. Biochemistry and the use of antigens, vitamins, hormones, and certain drugs have their place in his procedures.

A MONOGRAPH ON VEINS. By Kenneth J. Franklin, D.M., M.R.C.P. Cloth. Pp. 410, with 45 illustrations. Price, $6.00. Charles C. Thomas, 220 E. Monroe St., Springfield, Ill., 1937.

This is the first monograph on the subject published in the English language. In fact, it is probable that no monograph on the subject in any language appeared earlier than 1932. The author, with a taste for original investigation and never-ending search, has spent many years collecting the material both from observation and from a vast literature to make this book what it is.

Following the historical introduction, and some consideration of the part played by the heart, arteries, capillaries, and veins, we have the veins studied from the standpoint of embryology, of anatomy, and of their valves. We learn something of the amount of circulating blood, of the venules, and of absorption by, and diffusion from, veins. A great deal of consideration is given to veins and the nervous system, to the heart and the venous return, to the effects of hydrostatic pressure, to the effects of the contraction of voluntary and of involuntary muscles upon the venous return, and to other equally interesting phases of the general problem. Much of the book is written primarily for those engaging in research, but there are chapters given to clinical application.

With osteopathy devoting so much attention to the circulation, it goes without saying that many osteopathic physicians should find this book of outstanding interest and value.

MATERNAL DEATHS—THE WAYS TO PREVENTION. By Iago Galdston, M.D. Pp. 115. Cloth, $.75. Paper, $.50. The Commonwealth Fund, 41 East 57th Street, New York City, 1937.

Dr. Galdston, who holds that the medical profession alone cannot solve the problem of the needless loss of mothers' lives, but that it demands the cooperation of every individual and organization concerned with public health and welfare, has collected a great deal of the essential information and has prepared suggestions for its utilization. He wrote this book for circulation among laymen and health workers as well as physicians.

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Books Received

THE INTERNATIONAL MEDICAL ANNUAL, 1938. Editors, H. Letheby Tidy, M.A., M.D., (Oxon.), F.R.C.P., and A. Rendle Short, M.D., B.S., B.SC., F.R.C.S. Cloth. Pp. 615, with illustrations. Price, $6.00. William Wood and Company, Mt. Royal and Guilford Avenues, Baltimore, Md., 1938.

SURFACE AND RADIOLOGICAL ANATOMY. By Arthur B. Appleton, M.A., M.D, (Cantab.), William J. Hamilton, M.D., B.Ch. (Belf.), D.Sc. (Glas.), F.R.S.E., and Ivan C. C. Tchaperoff, M.A., M.D., B.Ch. (Cantab.), D.M.R.E. Cloth. Pp. 311, with 338 illustrations. Price, $5.50. William Wood and Company, Mt. Royal and Guilford Avenues, Baltimore, Md., 1938.

MEDICAL WRITING: SOME NOTES ON ITS TECHNIC. By James H. Dempster, M.A., M.D. Cloth. Pp. 168, with 11 illustrations. Price, $2.50. Bruce Publishing Co., St. Paul, Minn., 1937.

ARTIFICIAL FEVER: PRODUCED BY PHYSICAL MEANS; ITS DEVELOPMENT AND APPLICATION. By Clarence A. Newmann, A.B., M.D., F.R.S.M., Associate professor of Psychiatry, Northwestern University Medical School, Honorary Professor of Medicine, National University of Mexico, C.R.B. Exchange Professor of the University of Ghent, Liege, Louvain and Brussels, Belgium. Cloth. Price, $6. Pp. 294, with 68 illustrations. Charles C. Thomas, Springfield, Illinois, 1938.

BETTER EYES WITHOUT GLASSES. By Bengamin Gayelord Hauser. Paper. Price, $1.50. Pp. 80. Tempo Books Inc., 580 Fifth Ave., New York City, 1938.

INJECTION TREATMENT OF VARICOSE VEINS AND HEMORRHOIDS. By H. O. McPheeters, M.D., F.A.C.S., and James Kerr Anderson, M.D., F.A.C.S. Cloth Pp. 315, with 82 illustrations. Price, $4.50. F. A. Davis Co., 1914-16 Cherry St., Philadelphia, 1938.

MATERIA MEDICA DRUG ADMINISTRATION AND PRESCRIPTION WRITING. By Oscar W. Bethea, M.D., Ph.G., Ph.M., F.C.S., F.A.C.P. Fifth revised edition. Cloth. Pp. 577. Price, $5.00. F. A. Davis Co., 1914-16 Cherry St., Philadelphia, 1938.

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* *Bernhard, R., Med. World 54:378, 730, 1936.*
* *Smith, C., Clin. Med. and Surg. 44:81, 1937.*
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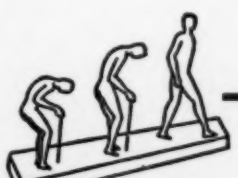

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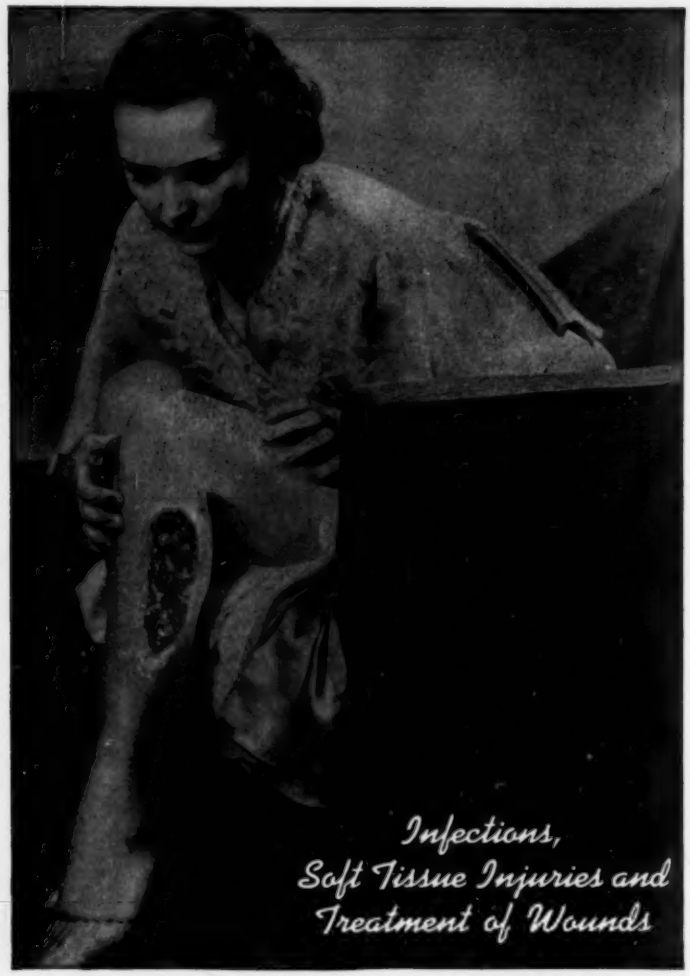

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Barnes, Elaine, from Rose City, Mich., to c/o Dr. Rose McBride, 35 Harvard Bldg., Johannesburg, South Africa.

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Farnsworth, W. C., from Tyler, Texas, to Lone Oak, Texas.

Ferguson, E. Gertrude, from 107½ W. Main St., to 123½ N. Washington St., Neosho, Mo.

Fisher, Roy B., from Mt. Pleasant, Mich., to 206½ E. Main St., Midland, Mich.

Fidler, Mary Ann, from Honolulu, T. H., to 609 Shafer Bldg., Seattle, Wash.

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Groenewoud, Jennie K., from Chicago, Ill., to 643 S. Greenwood Ave., Kankakee, Ill.

Groenewoud, John C., from Chicago, Ill., to 643 S. Greenwood Ave., Kankakee, Ill.

Groves, G. B., from 301 Marsh Place Bldg., to 208 Marsh Place Bldg., Waterloo, Iowa.

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Holloway, James L., from Dallas, Texas, to Mountain Lodge, Winslow, Ark.

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Hume, Dean G., from El Dorado, Kans., to 1022 Seventh, Des Moines, Iowa.

Jones, W. E., from Nacogdoches, Texas, to 104 Glenwood, Akron, Ohio (Temp.)

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MacLeod, John M., from 803 Main St., to 23 Church St., Moncton, N. B., Canada.

McNerney, Joseph, from 603 E. 12th St., to 1304—18th St., Des Moines, Iowa.

Miller, John R., from 318-22 Skaggs Bldg., to 306-10 Skaggs Bldg., Plainview, Texas.

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Pierce, Everett L., from 194 Church St., to 327 Franklin St., Newton, Mass.

Plude, Grace Purdum, from 224-28 Gordon Arcade, to 230 Gordon Arcade, Cleveland, Ohio.

Porter, Eldon B., from 520 J.M.S. Bldg., to 512 J.M.S. Bldg., South Bend, Ind.
Schubert, M. J., from 1444 Wayne Ave., to 1527 Wayne Ave., Dayton, Ohio.
Sexton, E. C., from Bieri Bldg., to 513 Market, Osage City, Kans.
Seyfried, Lloyd A., from 2407-08 David Stott Bldg., to 2402 David Stott Bldg., Detroit, Mich.
Shaffer, James R., from Des Moines, Iowa to 119 W. State St., Mason City, Iowa.
Simmers, M. H., from Los Angeles, Calif., to 536 S. Broadway, Pasadena, Calif.
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Thompson, Francis J., from Cleveland, Ohio, to Main St., Chardon, Ohio.
Vaughan, C. Harry, from 267 Pearl St., to 260 Main St., Burlington, Vt.
Vos, John F., from Chicago, Ill., to 522 West St., Reno, Nev.
Walrod, W. M., from 109 N. Market St., to 225 E. Main St., North Manchester, Ind.
Warden, Robert M., from Philadelphia, Pa., to 387 Upper Mountain Ave., Upper Montclair, N. J.
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Willette, Lawrence L., from Howland, Maine, to Box 343, 20½ Main St., Pittsfield, Maine.
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Wilson, Warren W., from Henderson, N. C., to 804 Security Natl. Bank Bldg., High Point, N. C.
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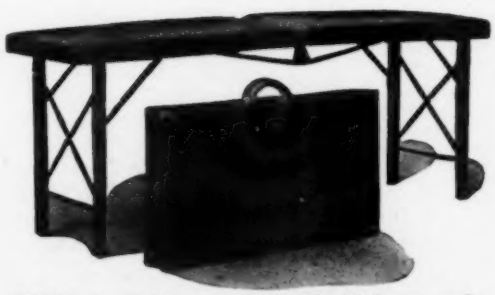

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